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Environmental Fate of Fog Oil at Fort McClellan, Alabama

Submitted to:

Kansas City District
United States Army Corps of Engineers
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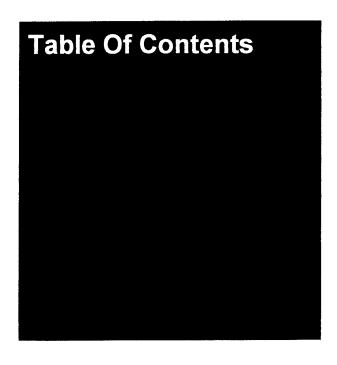
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TABL	_E OF CONTENTS	:
LIST	OF TABLES	IV
LIST	OF FIGURES	VI
SECT	TION 1.0 INTRODUCTION	. 1
SECT	TION 2.0 OBJECTIVES	. 4
SECT	TION 3.0 SITE DESCRIPTION	. 5
3.1 F	ORT McCLELLAN	. 5
	.1.1 Geomorphology	
3	.1.2 Soils	. 7
3	.1.3 Groundwater	12
	.1.4 Surface Water	
3	.1.5 Climate/Atmosphere	13
3	.1.6 Natural Resources	14
3.2 S	SAMPLE LOCATION DESCRIPTIONS	16
3	.2.1 Range 24 A - Site 1	17
	.2.2 Range 56 - Site 2	
	.2.4 Choccolocco Creek - Site 4	

SECTION 4.0 METHODS	21
4.1 RECONNAISSANCE TRIP AND SELECTION OF SAMPLE SI	TES21
4.2 MODELING FOG OIL DISPERSION	22
4.3 MEDIA SAMPLING METHODS	22
4.3.1 Soil	
4.3.2 Surface Water	
4.3.4 Vegetation	
4.3.5 Insects	25
4.3.6 Bats	
4.4 SAMPLE PRESERVATION AND SHIPMENT	
4.5 LABORATORY ANALYTICAL METHODS	27
4.4.1 Soil and Sediment (Based on EPA Methods 8100, 3540	, and
3630)	29
4.4.2 Water (EPA Method 525)4.4.3 Insects, Bats, Guano, Fish, Bark/Leaves	
4.4.4 Mass Spectrophotometry Confirmation	30
4.4.5 Quality Assurance and Control Samples	
4.6 STATISTICAL ANALYSIS	
4.7 SITE SIMILARITY INDEXES	
4.8 FOG OIL SMOKE SAMPLES	32
SECTION 5.0 RESULTS/DISCUSSION	34
5.1 INTRODUCTION	34
5.2 SOIL	36
5.3 SURFACE WATER AND STREAM SEDIMENT	36
5.4 VEGETATION	40
5.5 INSECTS	43
5.6 ANIMAL TISSUE	44
5.7 FOG OIL SMOKE SAMPLES	
SECTION 6.0 CONCLUSION	
SECTION 7.0 LITERATURE CITED	49
APPENDIX A LABORATORY DATA, FORMS, AND ANALYSES	,

APPENDIX B WATER AND SEDIMENT DATA

APPENDIX C SPECIES OF TREES AND SHRUBS AT EACH SAMPLE SITE

APPENDIX D INSECT ANALYSIS AND RESULTS

APPENDIX E FIELD DATA SHEETS

APPENDIX F FOG OIL SMOKE SAMPLE INFORMATION AND ANALYSIS



1973)	£
TABLE 2. Threatened and endangered species known to occur on Fort McClellan. Status and location are presented (Ebasco Environmental 1994)	16
TABLE 3. Number and type of laboratory samples from Fort McClellan	28
TABLE 4. Fog oil hydrocarbons with long environmental residence time selected for analysis. Samples were analyzed for these compounds and their isomers	28
TABLE 5. Location, distance, and type of generator information for fog oil smoke samples.	33
*sample canister was placed at the base of the generator	33
**sample canister was placed on top of generator unit near the fog oil smoke exit port	33
TABLE 6. Results of fog oil component analysis for soil samples from all sites	37
TABLE 7. Results of fog oil component analysis for water samples from all sites	38

TABLE 8. Results of fog oil component analysis for sediment samples from all sites.	39
TABLE 9. Results of fog oil component analysis for plant tissue samples from all sites.	41
TABLE 10. Comparisons of diversity among sites using data collected from vegetation transects.	42
TABLE 11. Simpson's Similarity Indices* calculated for vegetation transect data collected at each site	42
TABLE 12. Results of insects analysis performed to determine similarity of insect orders and communities collected at 4 sites.	43
TABLE 13. Results of fog oil component analysis for bat, fish, insect tissue and guano samples from all sites	45



FIGURE 1.	_ocation of Fort McClellan, Alabama	. 6
FIGURE 2.	Sample locations on Main Post at Fort McClellan. Alabama	18
FIGURE 3	Sample locations on Pelham Range at Fort McClellan, Alabama	19

Section 1.0 Introduction

A study of fog oil was initiated at Fort McClellan. Alabama in August. 1995. This study assessed the environmental fate of fog oil in areas where fog oil smoke production had occurred chronically (over 10 years). This study was conducted as part of the "Biological Assessment: Relocation of U.S. Army Chemical School and U.S. Army Military Police School to Fort Leonard Wood. Missouri" (3D/Environmental 1996).

The proposed Base Realignment and Closure (BRAC) action will involve moving the U.S. Army Chemical and Military Police schools from Fort McClellan, Alabama to Fort Leonard Wood, Missouri. A major component of this BRAC action is introduction of fog oil smoke training to Fort Leonard Wood. Because the BRAC action may affect the human environment, an Environmental Impact Statement (EIS) was prepared. Potential impacts to endangered and threatened species were assessed in a Biological Assessment (BA).

Two federally endangered species, Indiana bats (*Myotis sodalis*) and gray bats (*Myotis grisescens*), and one threatened species, the bald eagle (*Haliaeetus leucocephalus*) occur on Fort Leonard Wood. These species are protected under the Endangered Species Act (ESA) (Public Law 93-205).

Samples were obtained from 3 locations (exposure sites) where fog oil smoke training has occurred since the 1980's: Range 24 A, Range 56, and Battle Drill Area. The

1

type and amount of fog oil smoke training varies at each site. We also selected a reference or control site at Choccolocco Creek.

We selected a reference site at a location where fog oil smoke training had not occurred. We were limited in choices of possible reference sites at Fort McClellan because most of Fort McClellan's water systems have been impacted from fog oil training and we needed a reference site with aquatic habitat. The Choccolocco Creek reference site is outside Fort McClellan's boundary, but is on land leased by the installation from the State of Alabama's Forestry Office.

We sampled surface water, soil, sediment, and biota tissue to determine the persistence of fog oil in the environment, and to determine whether fog oil bioaccumulates. We looked at fog oil hydrocarbons in tissue of 3 trophic levels of the terrestrial ecosystem: primary producers (plants), primary consumers (insects), and secondary consumers (bats). We also collected fish (a prey item of bald eagles) and analyzed their tissue for fog oil constituents.

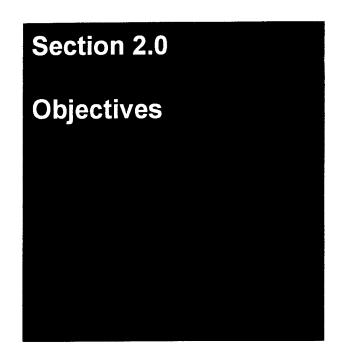
A second study was initiated in October 1995. This study involved collecting samples of fog oil smoke from M56 and M157 generators to determine the chemical composition of fog oil smoke. Several studies have reported volatile or semi-volatile organic compounds form in fog oil smoke as it leaves generators. These studies also indicate some thermal decomposition occurs as well as chemical changes in fog oil smoke. Samples of fog oil collected in October 1995 were examined for volatiles, semi-volatiles, and thermal decomposition products. We used these analyses to identify the potential contribution of fog oil to chemicals identified in water, soil, sediment, and biota tissue samples. We were able to determine how fog oil chemically changes after passing through the generator and condensing into smoke.

Fog oil has had several designations in its history which may lead to confusion. There are two types of fog oil, "old" fog oil and "new" fog oil. Fog oil also has letter designations used by the military for purchasing or issuing requests for production from manufacturers: Types A and B are "old" fog oil (also referred to as SGF 1) that were manufactured under specifications A and B before 1986. "New" fog oil, designated as

types C, D, or E, is also referred to as SGF 2 fog oil (Standard Grade Fuel 2). It is the primary material currently used to produce smoke at Fort McClellan and other installations. Fog oil type D is currently used at Fort McClellan, Alabama. Fog oil type D or E will be used at Fort Leonard Wood. Fog oil types C, D, and E are chemically and structurally the same compounds. Different types of fog oil are defined by requirements and specifications given to manufacturers.

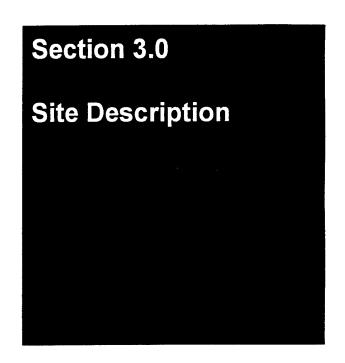
Results from both studies were used in design and development of toxicological studies for the Fort Leonard Wood BRAC Biological Assessment and Ecological Risk Assessments. While the type of fog oil used at the two installations may be different, environmental behavior of fog oil at Fort McClellan will have useful applications to Fort Leonard Wood. Old fog oil that was used at Fort McClellan had high concentrations of aromatic hydrocarbons not found in new fog oil. These aromatic hydrocarbons are the most likely component of fog oil to be retained in the environment. Our analysis of fog oil smoke detected aromatic hydrocarbons and paraffinic hydrocarbon. If none of the hydrocarbons in old fog oil are present in samples taken from Fort McClellan, it is likely no fog oil hydrocarbons will be retained in the environment at Fort Leonard Wood.

Samples from exposure sites and the reference site were analyzed for fog oil hydrocarbons and one chlorinated hydrocarbon. Hexachloroethane (HC) is another obscurant used extensively at exposure sites. HC is a chlorinated hydrocarbon that has a long environmental residence time. In order to insure hydrocarbons detected in samples from exposure sites were from fog oil and not HC, we included HC in our analysis.



This study was performed to determine the following:

- Do constituents of fog oil bioaccumulate in plant, insect, bat, or fish tissues in areas where fog oil smoke training has been conducted for at least 10 years?
- Does fog oil used at Fort McClellan remain in soil, water, or sediment long enough to be detected in media samples?
- Does fog oil migrate vertically into the soil in concentrations large enough to be detected?
- What volatile and semi-volatile compounds are formed in fog oil smoke after it is released from M56 and M157 generators?
- What percentage of type D or E (hydrotreated) fog oil is aromatic?



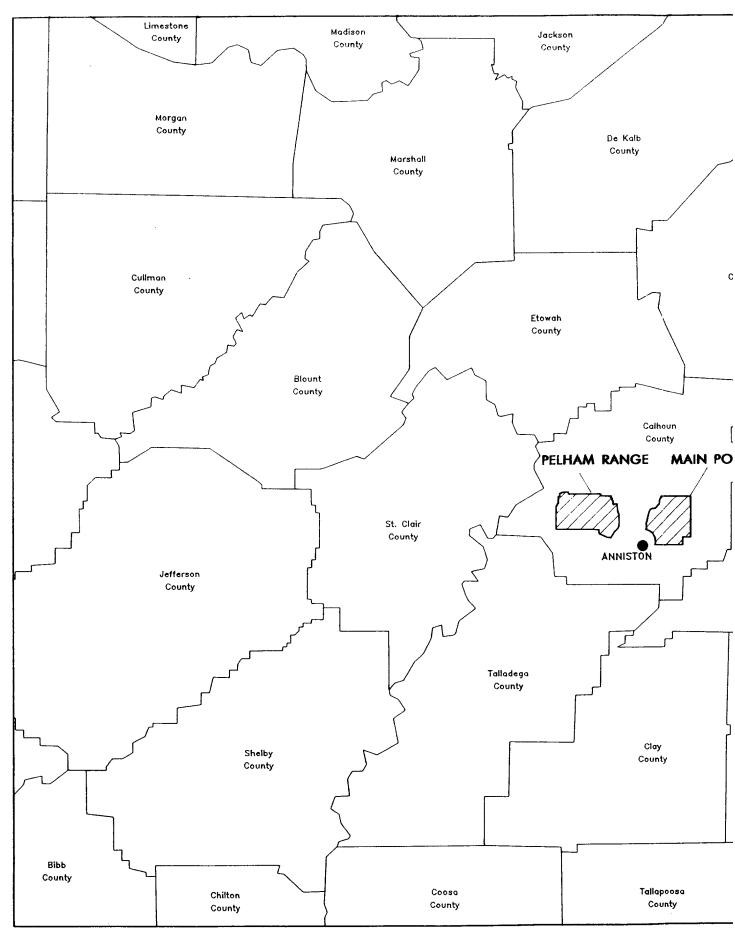
3.1 FORT McCLELLAN

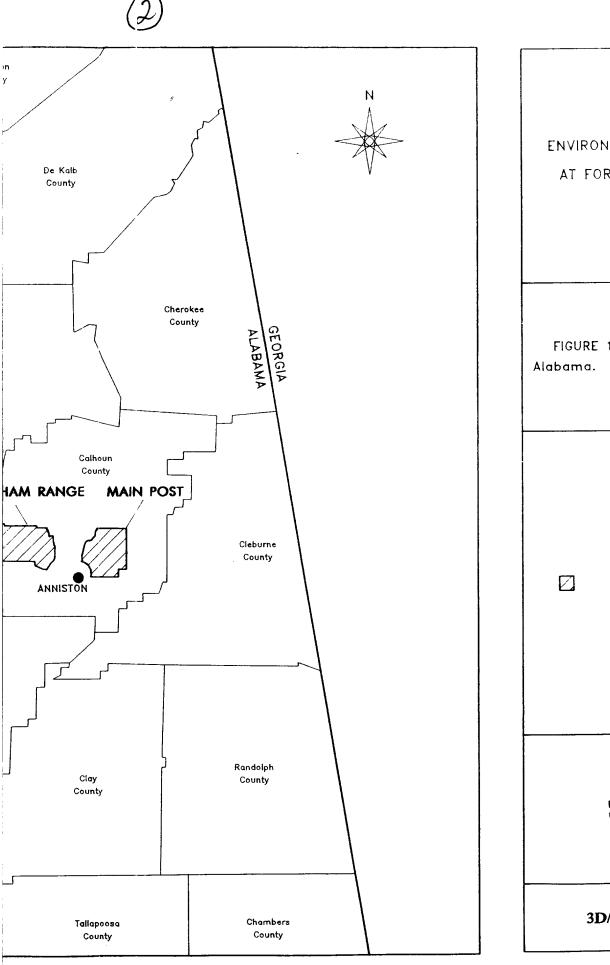
3.1.1 Geomorphology

Fort McClellan is located in Calhoun County within the Ridge and Valley Provinces of the Appalachian Highlands (Figure 1). Rock within the Ridge and Valley Province is folded and faulted. The province displays many geomorphic ridges and valleys, of alternating strong and weak strata. Streams in these valleys and ridges have trellis drainage systems. Summits on the ridges may represent former erosion surfaces, and hundreds of gaps which are indicative of innumerable past cases of stream diversion (Thornbury 1965).

The province is an assemblage of valleys surrounded by narrow, linear ridges. The eastern part of the province is predominately valley and not crossed by a single transverse ridge. The western part is characterized by linear sandstone ridges separated by limestone and shale valleys (Thornbury 1965).







ENVIRONMENTAL FATE OF FOG OIL AT FORT McCLELLAN, ALABAMA FIGURE 1. Location of Fort McClellan, Fort McClellan

Kilometers
14 28



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FIGURE 1. Location of Fort McClellan, Alabama.

Fort McClellan

Kilometers

The Ridge and Valley Province is divided into 3 sections: northern, middle, and southern. Calhoun County lies within the southern section. The southern section has numerous thrust faults with homoclinal ridge characteristics and longitudinal drainages (Thornbury 1965).

There are 19 known caves in the Calhoun County. The names of the caves are included here with a brief description of their major features (Table 1).

Folded and faulted Precambrian and Pennsylvanian rocks are the predominant geologic structural features of the Fort McClellan area. These rocks have folded into sharp northeastward-tending synclines and anticlines as well as thrust faults.

The Main Post is characterized by the Weisner Formation, composed of shale, siltstone, sandstone, quartzite, and conglomerate. Outcrops of the formation form hills or mountains. Quartzite and conglomerate form ledges along the side of the Choccolocco Mountain (Ebasco Environmental 1994). Choccolocco Mountain borders the eastern side of Main Post.

Pelham Range is underlain by Cambrian dolomites and has rolling topography with moderate relief. The Cheputepec, Copper Ridge, and Ketona dolomite formations occur under the area. The northwestern portion of Pelham Range is unique, where dolomite contacts the anticlines and synclines of the Conasauga formation. Chert is quite abundant in these formations (Ebasco Environmental 1994).

3.1.2 Soils

Calhoun County, Alabama has 4 major geologic sections: rough mountains, intermediate ridges, lower ridges, and valleys (Thornbury 1965). The parent materials within these sections are different, and important in describing soils types and formations within the county.

TABLE 1. Nineteen identified caves in Calhoun County, Alabama (Varnedoe 1973).

Cave Name	Major Features
Wilson Cave	Rock Type: Ft. Payne Chert Type of Entrance: stoopaway Length of Cave: 30 feet Depth of Cave: 27 feet
Erby Cave	Rock Type: Conasauga Limestone Type of Entrance: crawl Length of Cave: 91 feet Depth of Cave: single level
Baswell Cave	Rock Type: Limestone Type of Entrance: stoopaway Length of Cave: 30 feet Depth of Cave: single level
Maxwellborn Cave	Rock Type: Conasauga Limestone Type of Entrance: crawl Length of Cave: 30 feet Depth of Cave: single level
Oxford Cave	Rock Type: Conasauga Limestone Type of Entrance: Length of Cave: 912 feet Depth of Cave: single level
Cedar Mountain Cave	Rock Type: Limestone Type of Entrance: stoopaway Length of Cave: 304 feet Depth of Cave: 27 feet
Daugette No. 1 Cave	Rock Type: Limestone Type of Entrance: stoopaway Length of Cave: 1074 feet Depth of Cave: 121 feet

TABLE 1. Nineteen identified caves in Calhoun County, Alabama (Varnedoe 1973).

Cave Name	Major Features
Daugette No. 2 Cave	Rock Type: Limestone Type of Entrance: stoopaway Length of Cave: 91 feet Depth of Cave: single level
Greens Creek Mountain Cave	Rock Type: Limestone Type of Entrance: crawl Length of Cave: 30 feet Depth of Cave: single level
Green Valley Cave	Rock Type: Limestone Type of Entrance: stoopaway Length of Cave: 1400 feet Depth of Cave: 27 feet
Short Cave	Rock Type: Limestone Type of Entrance: stoopaway Length of Cave: 30 feet Depth of Cave: 27 feet
Lin and Randy's Pit	Rock Type: Limestone Type of Entrance: walk in Length of Cave: 91 feet Depth of Cave: 33 feet
Robertson Cave	Rock: Ft. Payne Chert Type of Entrance: Stoopaway Length of cave: 300 feet Depth of cave: 27 feet
Wright's Cave	Rock Type: Ft. Payne Chert Type of Entrance: stoopaway, crawl Length of Cave: 30 feet Depth of Cave: 21 feet

TABLE 1. Nineteen identified caves in Calhoun County, Alabama (Varnedoe 1973).

Cave Name	Major Features
Weaver Cave	Rock Type: Conasauga Limestone Type of Entrance: walk in, vertical pit Length of Cave: 1611 feet Depth of Cave: 27 feet
Lady Cave	Rock Type: Conasouga Limestone Type of Entrance: Horizontal artificial tunnel, vertical artificial opening Length of Cave: 304 feet Depth of Cave: 27 feet
Little Weaver Cave	Rock Type: Conasauga Limestone Type of Entrance: walk in Length of Cave: 699 feet Depth of Cave: single level
Miller's Cave	Rock Type: Copper Ridge Formation Type of Entrance: stoopaway Length of Cave: 30 feet Depth of Cave: single level
Meadows Cave	Rock Type: Ft. Payne Chert Type of Entrance: horizontal 20+ feet Length of Cave: 480 feet Depth of Cave: 27 feet

There are 6 soil associations within Calhoun County. One soil association is moderately well drained and is found in level to steep terraces. The soils in this group include Altavista, Masada, and Tate. Altavista and Masada soils developed from old general alluvium washed from Talladega slate containing some shale and sandstone. Tate soils developed from alluvium originating as Talladega slate, mica schist, and phyllite. Minor soils are Georgeville, Purdy, Robertsville, Philo, and Atkins (Harlin et al. 1961).

Another general soil association consists of deep, well-drained, level to moderately steep soils in valleys underlain by limestone and shale. Major soils within this association are Anniston, Allen, Decatur, and Cumberland. This soil association is located in the Alexandria and Choccolocco Valleys near Piedmont. Anniston and Allen soils have developed from old local alluvium washed from sandstone and shale. They occur on foot slopes of Choccolocco Mountains. Decatur and Cumberland soils have developed in thick beds of old general alluvium, or in residuum from limestone. Minor soils that occur within this association are Dewey, Etowah, Captina, Taft, and Robinson. These soils developed on uplands or stream terraces. Other minor soils are Huntington, Lindside, Philo, and Melvin.

The third general soil association consists of well drained to moderately well drained, stony or cherty soils on ridgetops, on steep slopes, and in local alluvium on foot slopes or in draws. The dominant soils are the Clarksville and Fullerton soils which formed from the residuum of cherty limestone. Minor soils are Landisburg, Lobelville, and Lee.

The fourth general soil association consists of moderately deep or shallow soils on ridgetops and steep slopes, and in local alluvium in draws. Major soils within this association are Rarden, Montevallo, and Lehew. These soils developed from residuum of shale and fine-grained, platy sandstone or limestone. Rarden soils are moderately welldrained and the Montevallo and Lehew are well drained. Minor soils are Camp and Enders, Cane, Locust, and Atkins.

The fifth soil association consists of well drained soils on stream terraces underlain by sand, gravel, and clay. The major soils are Sequatchie, Holston, and Nolichucky. These soils are well drained, and developed from thick beds of general alluvium washed from

sandstone and shale. Sequatchie soils are found in lower stream terraces. Holston soils are found in slightly higher terraces. Nolichucky soils are on steeper slopes. Minor soils occurring within this association are Montevallo, Pope, Philo, and Atkins.

Another soil association is made up of shallow, steep, and stony soils underlain by sandstone, limestone and Talladega slate. The major soil mapping units are Stony rough lands. This association occurs on broad steep uplands dissected by steep-walled drains. The largest association is located on the Choccolocco and Coldwater Mountains that lie near Anniston. The dominant land types in this association are Stony rough land, limestone; Stony rough land, sandstone; and Stony rough land, slate. Stony rough land, limestone consists of soil material and fragments of limestone. Stony rough land slate is mainly soil material and fragments of slate and quartz ranging from 3 inches to more than 4 feet in diameter. This association is mainly on the north slope of the Talladega Mountains. Minor soils include well-drained Linker and Muskingum, Jefferson, Anniston, and Allen soils (Harlin et al. 1961).

Of the 6 soil associations occurring in Calhoun County, 5 of them occur on the installation. The Attavista-Masada-Tate, Anniston-Allen-Decatur-Cumberland, Clarkston-Fullerton, Rarden-Montevallo-Lehew, and Stony rough land (Harlin et al. 1961).

3.1.3 Groundwater

There are several large ground water reservoirs in Calhoun County formed by thrust fault zones typical of the area (Ebasco Environmental 1994). Outcrop areas from the Knox Group and Weisner Formation are recharge areas for Coldwater Spring. Coldwater Spring receives groundwater recharge from fractured and weathered zones in the Chilowewe Group, solution cavities and channels in the Shady Dolomite, Conasauga Formation, and the Knox Group formations (Ebasco Environmental 1994).

Installation groundwater moves southward along the eastern side of the Choccolocco Mountains and then southwesterly at the southern end of the mountains. Under the cantonment area and Pelham Range, groundwater moves in a west-northwesterly direction toward the Coosa River (Ebasco Environmental 1994).

3.1.4 Surface Water

Calhoun County is drained by the Coosa River and its tributaries. Coosa River flows southwesterly and forms the western boundary of Calhoun County. Terrapin Creek, a tributary to the Coosa River, flows across the northeastern part of the county and furnishes water for the city of Piedmont. Nances Creek drains the area around Piedmont. Choccolocco and Coldwater creeks drain the eastern and southern parts of the county. Ohatchee, Tallahatchee, and Cane creeks are tributaries of the Coosa River (Harlin et al. 1965).

Cane Creek is the major drainage at Fort McClellan (Figure 3). Cane Creek flows east to west through Main Post and Pelham Range with headwaters from Choccolocco Mountain. Dothard Creek is another primary creek found in the cantonment area with headwaters located on and off the installation. Choccolocco Creek flows north to south and originates in the Choccolocco Mountain Corridor. Cane Creek, Cave Creek, and Dothard Creek, eventually flow into the Coosa River. (Ebasco Environmental 1994)

There are many named and unnamed ponds and lakes on the installation. Surface area of ponds and lakes on the installation totals 59 acres. Ponds and lakes in the cantonment area include Yahou Lake, Reily Lake, Cappington Ridge Lake, Duck Pond, Lake Contreras, Cane Creek Lake, Willet Springs, and Blue Hole (Ebasco Environmental 1994)

3.1.5 Climate/Atmosphere

The climate of Calhoun County, Alabama is humid, warm, and temperate, characteristic of the southern United States. It is characterized by long, hot summers and short, mild winters. The average annual temperature is 63°F. Summer temperatures can reach up to 100°F, however temperatures at or around 90°F are more common. During the winter, freezing temperatures are common, but short lived. Severe droughts and measurable snows are uncommon. Average rainfall is 53 inches while the annual snowfall accumulation is 0.5 to 1 inch. Winds are rarely strong, and frequently blow down Coosa Valley from the northeast (NOAA 1978).

3.1.6 Natural Resources

Calhoun County, Alabama falls within the Oak-Pine Forest Region of the United States. This region is characterized by the dominance of oaks and pines over much of the area. Deciduous hardwoods replace pines in typical vegetative succession in the area. Fort McClellan is within the Gulf Slope section of the Oak-Pine Forest Region.

The Gulf Slope section is in several physiographic regions and displays considerable topographic, soil, and vegetational diversity. Specifically, Fort McClellan is within the Coosa Valley, where longleaf pine occurs over 2000 feet above sea level. This Coosa Valley is a transitional region between central hardwood forest and southern evergreen forest.

Alabama occupies a central position in the Gulf Slope section. Vegetational features are diverse. Fort McClellan is within the Coosa Valley region where the transition of the oak communities of the Oak-Chestnut region to the Oak-Pine Region is gradual. Fertile valley lands are under cultivation. An increase in the amount of loblolly pine is apparent on the hills and ridges toward the southern end of the region.

Oak-pine forests dominate the area. Although the amount of land on the installation that is forested is substantial, no stands of climax forests exist on Fort McClellan. Stands of mature long-leaf pine (*Pinus palustrus*) exist on the installation.

Most of Pelham Range was cleared prior to purchase by the Army in 1940. Cleared areas were used for food and livestock production. There are 3 classifications of land on the installation: improved, semi-improved and unimproved grounds. Differences in classifications depend on the amount of disturbance and management programs in place. There are 2279 acres of improved grounds, 921 acres of semi-improved grounds, and 37,991 acres of unimproved grounds (Ebasco Environmental 1994).

Tree species found on mountainous uplands at Fort McClellan include: chestnut oak (Quercus prinus), scarlet oak (Q. coccinea), and pignut hickory (Carya glabra). More rolling hills are vegetated by southern red oak (Q. falcata), post oak (Q. stellata), chestnut oak, black oak (Q. velutina), blackjack oak (Q. marilandica), pignut hickory, and dogwood (Cornus florida). American beech (Fagus grandifolia), tuliptree (Linodendron tulipifera),

white ash (*Fraxinus americana*), maple (*Acer* spp.), white oak (*Q. alba*), American holly (*Ilex opaca*), and redbud (*Cercis canadensis*) grow in ravines between mountains and hills. Virginia pine (*Pinus virginiana*) is found along ridges, and longleaf pine is present along lower slopes of hills. Loblolly pine (*Pinus taeda*) has been planted in many areas at Fort McClellan.

Wetlands play an important role in the natural diversity of the post. Many wetlands are present on the installation including Bottomland Hardwood communities, hardwood depressions in upland communities, mixed scrub-shrub communities and herbaceous wetlands.

Canopy species in bottomland hardwood communities include: green ash (*Fraxinus pennsylvanica*), hackberry (*Celtis occidentalis*), red maple (*Acer rubrum*), American elm (*Ulmus americana*), water oak (*Quercus niger*), and sweetgum (*Liquidambar styraciflua*). Dominant riparian vegetation includes sycamore (*Platanus occidentalis*), river birch (*Betula nigra*), and black willow (*Salix nigra*). The herbaceous layer is dominated by sedges (*Carex spp.*), snakeroot (*Sanicula canadensis*), false nettle (*Boehmeria cylindrica*), green dragon (*Arisaema dracontium*), spotted jewelweed (*Impatiens capensis*), purple bluets (*Houstonia purpurea*), sensitive fern (*Onoclea sensibilis*), Virginia dayflower (*Commelina virginica*), river oats (*Chasmanthium latifolium*), sphagnum (*Sphagnum* spp.), nut rush (*Scleria triglomerata*), and woolgrass (*Scirpus cyperinus*).

Swamp dogwood (*Comus drummondii*), alder (*Alnus serrulata*), buttonbush (*Cephalanthus occidentalis*), and seedlings of river birch, sycamore, sweet gum, and black willow dominate wetland scrub-shrub communities.

Herbaceous wetlands on the installation are dominates by woolgrass, soft rush, cattail (*Typha latifolia*), seedbox (*Ludwigia* spp.), panic grass (*Panicum dichotomiflorum*), and sedges (Ebasco Environmental 1994).

3.1.7 Wildlife

A variety of wildlife species have been documented on Fort McClellan. Commonly identified species include white-tailed deer (*Odocoileus virginianus*), eastern cottontail rabbit

(Sylvilagus floridanus), swamp rabbit (Sylvilagus aquaticus), New England cottontail rabbit (Sylvilagus transitionalis), gray squirrel (Sciurus carolinensis), eastern fox squirrel (Sciurus niger), opossom (Didelphus virginiana), beaver (Castor canadensis), gray fox (Urocyon cinereoargenteus), red fox (Vulpes fulva), bobcat (Felis rufus), wild turkey (Meleagris gallapavo), northern bobwhite (Colinus virginianus), mourning dove (Zenaida macroura), and many species of waterfowl (Ebasco Environmental 1994).

Some species of threatened and endangered plants and animals occur or may occur within the limits of the installation (Table 2).

3.2 SAMPLE LOCATION DESCRIPTIONS

Media samples were taken from 3 smoke range training sites, Range 24 A (Figure 2), Range 56 (Figure 3), and Battle Drill Area (Figure 3), and one reference site, the Choccolocco Creek area near Fort McClellan (Figure 2). Samples of water, soil, vegetation, bats, fish, and insects were taken from each site and analyzed for chemical constituents found in fog oil.

TABLE 2. Threatened and endangered species known to occur on Fort McClellan. Status and location are presented (Ebasco Environmental 1994).

Common Name Scientific Name	Location	Federal Status (State Staus)
White Fringless Orchid Platanthera integrilabia	On Fort McClellan	Candidate
Fraser's Loosestrife Lysimachia fraseri	On Fort McClellan	Candidate
Mohr's Barbara's-Buttons Marshallia mohrii	On Fort McClellan	Threatened
Blue Shiner Notropis caeruleus	Near Fort McClellan Reported from Choccolocco Creek	Threatened
Red-cockaded Woodpecker Picoides borealis	Near Fort McClellan Habitat Present (Formerly nested on the post)	Endangered (State Listed)

3.2.1 Range 24 A - Site 1

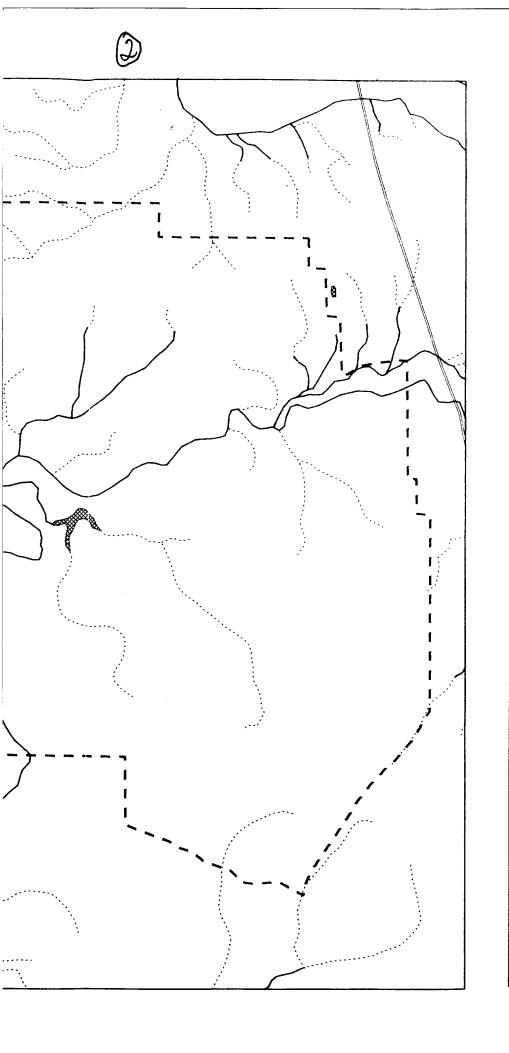
Range 24 A (40 acres) is on Main Post, southeast of the cantonment area. An intermittent tributary to the South Branch of Cane Creek runs through the middle of this range from south to north. Range 24 slopes gently to the stream from the west, and slopes up sharply on the eastern side.

The smoke release point is in a loblolly pine stand, averaging 25 cm diameter at breast height (dbh), on the southeast corner of Range 24. East of the release area is a large mowed field that leads to a 50-foot wide strip of riparian forest along the west side of the intermittent stream. Riparian vegetation along the stream consists of small, dense maples and hickories averaging 15 cm dbh. The average width of the stream is 10 feet. West of the stream is a steep sloping forest dominated by oaks with interspersed pines averaging 25 cm dbh. Soil types at Range 24 A are Anniston and Allen stony loams.

3.2.2 Range 56 - Site 2

Range 56 is located on Pelham Range north of Cane Creek, southwest of the Old Air Strip, and east of Brook Mountain. Range 56 is an open field containing early successional vegetation dominated by sumac (*Rhus sp.*) and blackberry (*Rubus sp.*). The terrain where smoke is generated is relatively level, but slopes up sharply to the observation area on the east side. Soil samples were taken on the active portion of Range 56; other samples at this site were taken at Cane Creek adjacent to the range.

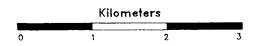
Cane Creek flows from east to west. At the sample site, the creek is dammed. Above the dam, the creek is 100 feet wide with a low flow rate. Below the dam, the creek flows swiftly and is 60 feet wide. Forest is fragmented throughout the area. Several woodlots exist near the creek. There are two loblolly pine plantations averaging 20 cm dbh on the north side. Riparian forest along the creek is dominated by elm, hickory, and maple with an average canopy tree diameter of 20 cm dbh. Soil types within the riparian zone of Cane Creek are Philo and Sendal silt loams. Soil types on Range 56 are Fullerton cherty silt loam, Lindside silt loam, and Rarden gravelly loam.



ENVIRONMENTAL FATE OF FOG OIL AT FORT McCLELLAN, ALABAMA.

FIGURE 3. Sample locations on Pelham Range at Fort McClellan, Alabama.

- Chronic Fog Oil Study Sampling Location
- Fort Boundary
- Pond / Lake
- Stream
- ······ Intermittent Stream
- Dual Lane Road



1 centimeter = 0.5 kilometer



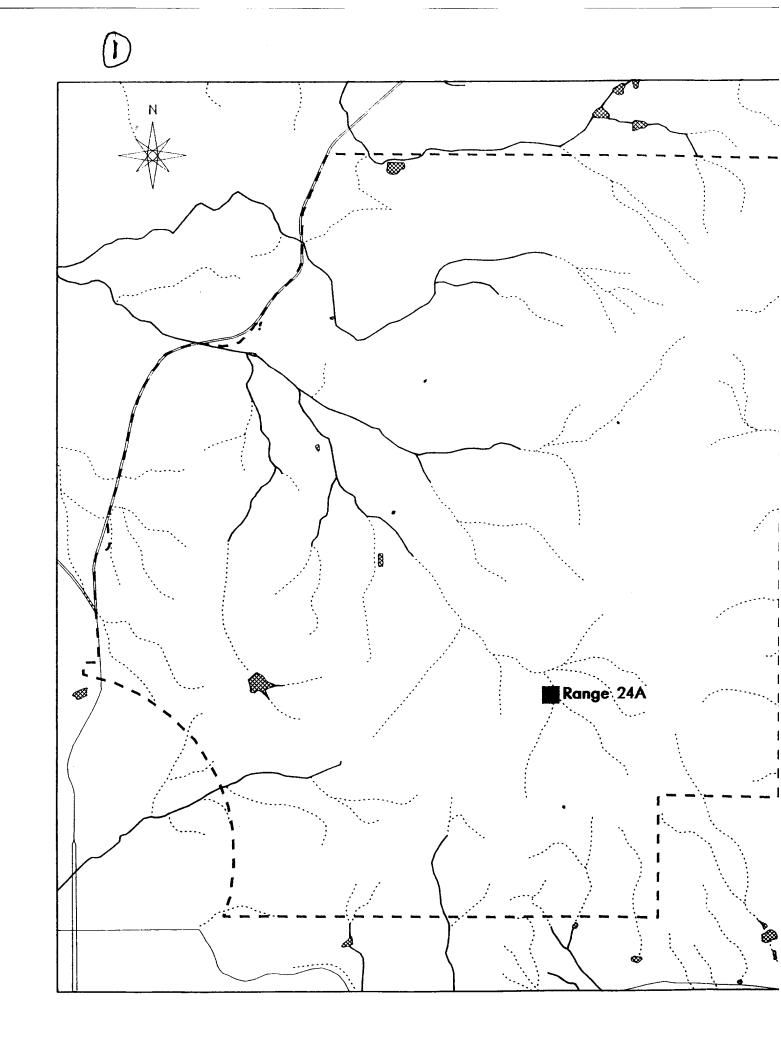
AT FORT McCLELLAN, ALABAMA.

FIGURE 3. Sample locations on Pelham Range at Fort McClellan, Alabama.

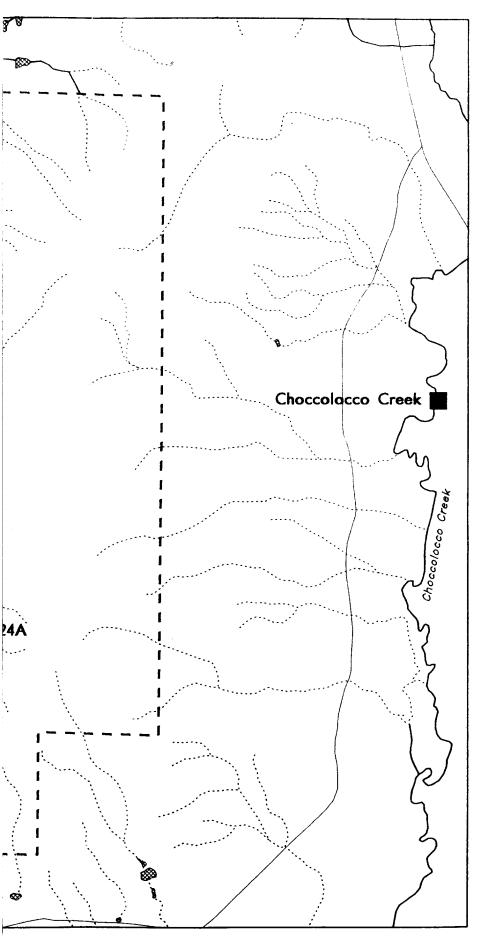
- Chronic Fog Oil Study Sampling
 Location
- Fort Boundary
- Pond / Lake
- ---- Stream
- ····· Intermittent Stream
- —— Dual Lane Road



1 centimeter = 0.5 kilometer







ENVIRONMENTAL FATE OF FOG OIL

AT FORT McCLELLAN, ALABAMA

FIGURE 2. Sample locations on Main Post at Fort McClellan, Alabama.

- Chronic Fog Oil Study Sampling Location
- Fort Boundary
- Pond / Lake
- Stream
- ····· Intermittent Stream
- Dual Lane Road
- --- Principal Road

Kilometers

1 centimeter = 0.5 kilometer



ENVIRONMENTAL FATE OF FOG OIL

AT FORT McCLELLAN, ALABAMA

FIGURE 2. Sample locations on Main Post at Fort McClellan, Alabama.

- Chronic Fog Oil Study Sampling Location
- Fort Boundary
- Pond / Lake
- --- Stream
- Intermittent Stream
- Dual Lane Road
- Principal Road



1 centimeter = 0.5 kilometer

3.2.3 Battle Drill Area - Site 3

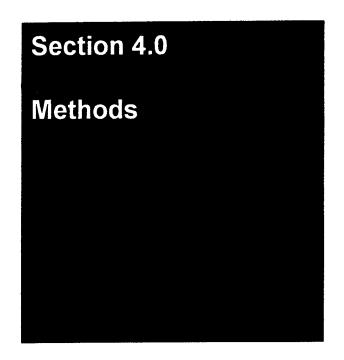
The Battle Drill Area is on Pelham Range north of Cane Creek and southwest of Brook Mountain. This area is a heavily used, open field that slopes gently toward Cane Creek. The open field training area north of Cane Creek is approximately 95 acres. Limited forest exists along both sides of the creek.

The forest along the creek is dominated by poplar and sweet gum averaging 25 cm dbh. There are loblolly pines interspersed throughout the forest. The average width of Cane Creek at this location is 60 feet. A ford used by all-terrain vehicles exists 100 feet east of the bridge. Soil types in the riparian zone of Cane Creek are Philo and Stendal silt loams. The primary soil types on the Battle Drill Area are Anniston and Allen gravelly loams.

3.2.4 Choccolocco Creek - Site 4

Choccolocco Creek is approximately 3.5 km east of Main Post. The land surrounding Choccolocco Creek at the sample site is part of the Choccolocco Creek State Forest. This land is leased by Fort McClellan for some non-intrusive military training activities. Sampling was conducted on both sides of a road bridge that crosses the creek.

This stream flows from north to south. Choccolocco Creek is a fast flowing stream with many shallow pools and an average width of 50 feet. The forested floodplain is dominated by sweetgum, maple, and elm with an average canopy tree diameter of 30 cm. Pines are interspersed throughout the floodplain but occur in lower numbers than in other sample sites. Soil types on the east side of Choccolocco Creek are Altavista and Masada silt loams. The soil type on the west side of the creek is Pope silt loam.



4.1 RECONNAISSANCE TRIP AND SELECTION OF SAMPLE SITES

3D/Environmental performed a reconnaissance trip to Fort McClellan, Alabama (August 1995). During this trip, we identified smoke training areas on the installation and types of training occurring on each location. Information was obtained on fog oil, smoke generators, air permits, technical manuals, field data sheets, weather data for one year, and previously conducted environmental studies. We collected samples of fog oil from a 55 gallon drum in the fog oil storage area at 24 A. A chain of custody form was completed and the samples were sent to a laboratory for analysis of compounds listed in Table 4 (Appendix A).

During reconnaissance, 3D/E visited 3 smoke training areas, Range 24 A, Range 56 and the Battle Drill Area. All 3 sites currently are used for smoke training. Previous land uses and training activities at each location were identified. We also identified potential reference locations on the installation, based on lack of anthropogenic influence, soil type, presence of aquatic habitat, and possible bat habitat in the vicinity. 3D/Environmental observed 2 smoke training exercises at Range 56 on Pelham Range.

4.2 MODELING FOG OIL DISPERSION

We used TREMS 1 (Tactical Resources Modeling Evaluation Modeling Systems) air dispersion model to estimate fog oil dispersion from each exposure site. These estimates were used in determining locations of sample sites relative to fog oil training areas.

4.3 MEDIA SAMPLING METHODS

Soil, stream sediment, and water samples may contact fog oil either through dispersion, runoff, or deposition.[. All samples were collected using standard field collection techniques. Replicate samples of soil, water, and sediment were taken every tenth sample.

Samples of insects, bats, and fish were taken at Range 24 A, Range 56, Battle Drill Area and a reference site along Choccolocco Creek. Weather data including temperature, wind speed and direction, moon phase, and percent cloud cover were recorded for each night of insect and animal collection. Organisms and tissues were collected using accepted standard practices.

4.3.1 Soil

Nineteen soil samples were collected at each site. Samples were collected near the point of chemical release. A random sampling location was selected at the reference site and then samples were taken as if it was a fog oil release point. One sample was taken 50 m upwind from the release point. Samples were taken 50 m, 100 m, and 200 m downwind from the release point. Colocated samples were taken at the 50 m location, 50 m from the location on both sides. For each sample, an auger was used to collect soil at depths of 0-3 inches, 3-12 inches, and 1-3 feet. A duplicate was taken after every tenth core sample. Parameters outlined by the EPA (EPA 1991a) were used for soil sampling. Each sample was homogenized in a stainless steel bowl with a stainless steel spoon. The sample was quartered, each portion mixed separately, and portions recombined. A sample jar was filled with homogenized soil. The soil auger, bowl, and spoon were decontaminated with distilled water after each soil sampling (EPA 1991a).

4.3.2 Surface Water

Surface water was collected following EPA guidelines (EPA 1991b) and procedures of the Hach Company (1989). At exposure sites, samples were collected near a bridge or road from which fog oil is released. At the reference site samples were collected near a bridge. At Range 56, Battle Drill Area, and the reference site, 10 samples were collected at 50 m intervals; five upstream and five downstream from the bridge or dam. The stream at Range 24 A was intermittent and samples of water were taken from 3 sites in 2 different streams near the chemical release area.

At each sampling location, stream width, bank height, water turbidity, and sediment type were recorded. Water and sediment samples were collected by entering the stream perpendicular to the sample location. When possible, samples were collected from midstream. Water was collected in a 1-L amber glass sample bottle. The bottle was turned upside down, lowered to mid-depth, turned upright, and raised to the surface. The sample bottle was labeled with sample number, date, and sampling site. Using the same collection method, an additional water sample was collected in a 12-oz plastic sample jar.

Flow rate of the stream was determined for the portion of the stream from which water and sediment samples were collected. Flow rate was calculated by measuring width and depth of the stream and determining travel time of a buoyant object across a known distance. Flow rate was calculated at 2 locations for each site.

Temperature, total dissolved solids, and dissolved oxygen content of samples in 12-oz plastic containers were measured in the field. Temperature was measured using a Temperature Pocket Pal Tester (Model 44450-00, Hach Company, Loveland Colorado). The range of the temperature tester is -50 to 170° C (accuracy $\pm 1^{\circ}$ C). The probe was immersed in the sample and gently stirred until the digital display stabilized.

Conductivity was measured using a Total Dissolved Solids (TDS) Pocket Pal Tester (Model 44600, Hach Company, Loveland Colorado). The detection range of the TDS tester is 10 to 1990 TDS units with an accuracy of ±2 at 25°C. The probe was immersed in the sample and gently stirred until the digital display stabilized.

Dissolved oxygen content was measured using CHEMets® colorimetric analysis kit (CHEMetrics, Inc., Calverton, Virginia). The kit included CHEMet® vacuum ampoules filled with solution; an instrument with which to break the ampoules, and a color chart with which to match color intensity of the solution with dissolved oxygen content of the sample. An ampoule was immersed in the sample and broken, allowing sample water to flow into the ampoule. The ampoule was mixed gently for approximately 2 minutes to introduce sample water with analytical solution. Upon mixing, the solution developed a blue color. The color of the filled ampoule was compared with a color chart to determine the parts per million (ppm) of dissolved oxygen in the water sample.

Samples collected in 12-oz plastic jars were used to measure hardness and pH 1-8 h after samples were taken. Hardness, measured as milligrams calcium carbonate per liter of water, was determined with a digital titrator and hardness kit (model HA-DT, Hach Company, Loveland Colorado). A 50 mL sample was removed from the plastic jar and procedures of the Hach Company (1989) were followed. The result was doubled to obtain total hardness per 100 mL.

Sample pH was measured using a pH Pocket Pal Tester (Model 44350-00, Hach Company, Loveland Colorado). The range of the pH tester is 0.0-14.0 pH and accuracy is ± 0.2 pH. Prior to testing each sample, the pH tester was calibrated using pH 7.0, 4.0. and 10.0 solutions (Hach Company, Loveland Colorado). The tester was immersed in 7.0 buffer solution and then immersed in the sample.

Samples in plastic jars were discarded after pH and hardness were analyzed. Samples in 1-L glass bottles were sealed and transported to a laboratory within 24 hours of collection in a cooler containing ice.

4.3.3 Stream Sediment

Stream sediment was collected following EPA guidelines (EPA 1991b). Sample locations were coincident with water sample locations. A shovel was used to scoop sediment from beneath the water into an 8 ounce glass sample jar with a Teflon®-lined lid. Large rocks were removed from sediment samples. Jars were labeled with sample site, sample number, and date.

4.3.4 Vegetation

Vegetation sampling included collection of tissue samples for laboratory analysis and transect sampling to determine species composition. Tissue samples were analyzed to identify fog oil components.

Three tissue samples were collected from each site. At each exposure site, 3 live trees near chemical release areas were selected. At the reference site, 3 live trees were selected. From each tree, 6 in² of bark were scraped into a whirl pak®. Ten leaves from the tree were removed and included in the same whirl pak. Gloves were worn to avoid contamination. The species from which samples were taken was identified and samples were transported in a cooler containing dry ice.

At each site, two 100 m transects were established along identical bearings to minimize effects of sunlight exposure on plant growth. Diameter at breast height (dbh), tree height, and species were recorded for every tree greater than 1.8 m tall within 1 m of the transect. This data was used to compare exposure sites with the reference site.

4.3.5 Insects

Insects were collected for contaminants analysis using black (ultraviolet) and white (fluorescent) light traps. The traps consist of a light source surrounded by Plexiglas dividers over a funnel with a mesh bag that retains the insects alive. Traps were suspended at least 2 m in the air to capture night flying insects. One black and one white light trap were deployed at dusk (1900-2130 h) for 2 nights at each exposure site. Insects were collected simultaneously at the reference site. Between 0200-0320 h, traps were emptied into whirl paks®, and samples were weighed. Samples were stored and shipped on dry ice.

Insects collected for analysis of fog oil hydrocarbons were to be split, one half for analysis and one half for characterization of insect communities at the 4 sites. We were unable to collect sufficient samples of insects to split the samples. Therefore, an additional night of trapping was performed to provide insects that could be used to characterize insect communities. One night of trapping does not provide enough data to draw statistical inferences. Therefore, the information presented for insects communities should be considered as baseline information only. One black and one white light trap were deployed

at each site between 1745 h and 2015 h. Insects were collected between 0755 h and 0940 h the next day. Samples were labeled and returned to 3D/E. Insects were identified to Order. For each site, the Shannon-Weiner Diversity Index and evenness of species were calculated. The Jacard Similarity Index was used to compare composition of insect species at the reference site with each exposure site.

4.3.6 Bats

Bats were simultaneously captured at the reference and exposure sites for contaminants analysis. Mist-netting followed procedures outlined in the 1991 Indiana/Gray Bat Recovery Team Meeting Notes. Nets were stacked 6.1 or 9.1 m high and raised from sunset until at least 0200 h. Nets were positioned from the ground or water to the tree canopy, with enclosing foliage or stream banks on each side. Nets were checked every 20 minutes and care was taken to avoid disturbance within 50 m of nets. Mist-netting was conducted on nights with little or no precipitation, ambient temperature >10°C, and light or no wind. Netting was not conducted under full moon, unless there was at least 50% cloud or canopy cover.

Two sites were netted each calendar night. Three nets were deployed at each exposure site per night, for two consecutive nights. This yielded a total of 6 net-nights per exposure site. Three nets were operational at the reference site on all nights of the survey, yielding a total of 12 net-nights. At Range 56, Battle Drill Area, and the reference site, nets were erected across streams. At Range 24 A, vegetation was too dense to permit net placement over the stream; nets were erected on a nearby dirt road.

Bats were removed from nets and processed. Protected bats (e.g., gray bats) were released unharmed at the capture site. We recorded the following data for each bat: species, age, sex, reproductive condition, right forearm length, weight, time of capture, capture height in net, and travel direction. Gray bats were marked with a numbered, white plastic armband before being released. At each sample site, up to 8 non-endangered bats were collected, anesthetized (with CO₂), and euthanized following accepted procedures (NIH 1985). These bats were processed for tissue analysis.

4.3.7 Fish

We seined to sample fish because it is effective in small streams or pools with little cover (EPA 1989). Seines were approximately 15 ft wide, and made of nylon netting with wooden poles on each end. We sampled fish at 2 exposure sites: Battle Drill Area and Range 56. We also seined the Choccolocco Creek reference site. All streams were small and smooth bottomed with pools and riffles. We could not seine the intermittent stream at Range 24 A. Collection, processing, and analysis were done following EPA (1989) and Krueger et al. (1988) standards.

4.4 SAMPLE PRESERVATION AND SHIPMENT

Bats and insects were euthanized and preserved with dry ice. Any large insects captured during bat mist netting surveys were collected by hand and placed in whirl paks. Insects caught in nets were weighed and labeled separately. Up to 8 non-endangered bats per site were placed in a dry ice chamber for 15 minutes for euthanasia. The bats were weighed and placed in sample bottles. Fecal samples were collected from each gray bat captured. Fecal samples were stored and transported in dry ice. Following collection, samples were sealed and shipped in dry ice the next day. Water and stream sediment samples were sealed and transported in a cooler containing ice.

4.5 LABORATORY ANALYTICAL METHODS

Over 200 samples were collected at Fort McClellan (Table 3). We reviewed the literature to determine components of fog oil which might be found in media samples (Table 4). Samples were analyzed for aromatic residues of fog oil.

Results of these analyses are in Appendix A. Gas chromatograph/mass selective detector (GC/MSD) confirmation of selected samples was conducted to confirm residues found by flame ionization detector (FID). Generally, 2 samples from each matrix were selected (one from the exposure site and one from the reference site). Samples were selected based on the number of spikes indicating presence of fog oil components as well as the apparent concentration of any selected compound. Confirmation results are in Appendix A.

TABLE 3. Number and type of laboratory samples from Fort McClellan.

Medium	Number of Samples
Soil	78
Bats	20
Insects	12 (35) ¹
Sediment	35
Guano	3 (8) ¹
Bark/Leaves	12
Water	29
Fish	13

¹ The number in () indicates the actual number of samples taken. The guano and insect samples were composited, respectively, so that all samples collected on each night would be analyzed as a single sample.

TABLE 4. Fog oil hydrocarbons with long environmental residence time selected for analysis. Samples were analyzed for these compounds and their isomers.

Fog Oil Components					
Biphenyl	Fluorene				
9-Methylanthracene	2,6-Dimethylnaphthalene				
4,4'-Dimethylbiphenyl	3,6-Dimethylphenanthrene				
1,3-Dimethylnaphthalene	1-Methylfluorene				
2-Ethylanthracene	1,2-Dimethylnaphthalene				
Phenanthrene	9,10-Dimethylanthracene				
2,3,5-Trimethylnaphthalene	Anthracene				
Hexachloroethane	Hexadecane				
2-Methylphenanthrene					

Attempts were made to characterize fog oil. The parent oil was diluted in hexane to a concentration of 1% and injected on a GC/FID using a DB-5. The oil was cleaned using a silicon (Si) column and the extract injected. A second aliquot of the 1% solution was injected on a GC/MSD in Scan mode and the ion range 75-76 amu (aromatic ring) was monitored. The absence of peaks in this mass range indicate there are no aromatics in fog oil. Standards were injected to demonstrate the detection limits with the MSD. It was determined that a 5 μ g/mL standard would give the minimum quantifiable response. Matrix interferences may increase this level (see Appendix A).

Fog oil was analyzed with ultraviolet light. A 0.001% solution was prepared and scanned from 200 to 400 nm. The lack of an absorbance peak ~ 250 nm indicates there are no aromatics in the fog oil (Appendix A).

Fog oil was analyzed by infrared light (IR). Neat fog oil was placed on an IR card (Figure 6). Triplicate peaks at 2850 - 2960 cm⁻¹ as well as peaks at 1375 cm⁻¹ and 1460 cm⁻¹ are characteristic of alkanes. There are no peaks at 3000 - 3100 cm⁻¹ (aromatic) or at 3020 - 3080 cm⁻¹ and 1640 - 1680 cm⁻¹ (alkenes), indicating no aromatics or alkenes in fog oil. To determine the detection limits for the IR, 1 mL of fog oil was spiked with various levels of 9-methyl anthracene and diluted to 10 mL with freon and analyzed using a cuvette with a 1 cm path length. The detection limit (semi-quantitative) for total aromatics in fog oil was 5% (Appendix A).

4.4.1 Soil and Sediment (Based on EPA Methods 8100, 3540, and 3630)

A 10 g soil sample was weighed into a 16 ounce jar with a Teflon-lined lid and 30 g of Na₂SO₄ and 200 mL of acetone:hexane were added. The mixture was mechanically shaken for 1 hour filtered through GF/A, and evaporated to < 5 mL. A 10 g Si column was prepared by transferring a slurry of Si with methylene chloride to a glass column with a glass wool plug in the bottom. A small amount (1-2 cm) of Na₂SO₄ was added to the top and methylene chloride was allowed to drain through the column. The column was rinsed with 40 mL of pet ether. The sample was loaded onto the column. The flask was rinsed with 2 mL cyclohexane and the rinse transferred to the column, with these load fractions discarded. The column was eluted with 75 mL of pet ether and 75 mL of methylene chloride (collected separately). These two fractions were rotary evaporated to < 5 mL and transferred to calibrated (1 mL) test tubes. Cyclohexane (1 mL) was added and the sample blown down to 1 mL.

4.4.2 Water (EPA Method 525)

A C₁₈ column was conditioned with 5 mL each methanol, methylene chloride, methanol, and water. Approximately 50 g of NaCl was added to a 500 mL water sample. Some samples required prefiltering through Whatman GF/A. The sample was aspirated through the SPE column under vacuum. The column was eluted with 6 mL methylene

chloride:pet ether (50:50). Cyclohexane (1 mL) was added and the sample blown down to 1 mL.

4.4.3 Insects, Bats, Guano, Fish, Bark/Leaves

The EPA has not established standard methods for sampling and analyzing tissue samples. However, these matrices were extracted using the soil/sediment methodology with modifications for extraction and additional cleanup.

Ten grams of fish and vegetation tissue were analyzed for each sample. For all other biological matrices, we used the entire sample for analysis. Na₂SO₄ was added to each sample at 4 times the sample weight. Samples were extracted twice with 100 mL methylene chloride and vacuum filtered through Whatman GF/A. Samples were rotary evaporated to ~ 5 mL and the volume adjusted to 10 mL with methylene chloride. A 5-mL aliquot was loaded onto a GPC column. The collected fraction was evaporated and solvent exchanged to cyclohexane. EPA Method 3630 (Silica Gel Cleanup) was used to clean the sample. A 10 g Si column was prepared by making a slurry of Si with methylene chloride. This slurry was transferred to a glass column with a glass wool plug in the bottom. A small amount of Na₂SO₄ (1-2 cm) was added to the top of the Si. The methylene chloride was allowed to drain through the column. The column was rinsed with 40 mL of pet ether and the sample loaded onto the column. The flask was rinsed with 2 mL of cyclohexane and the rinse transferred to the column. These load fractions were discarded. The column was eluted with 75 mL of pet ether and 75 mL of methylene chloride (collected separately). These two fractions were rotary evaporated to < 5 mL and transferred to calibrated (1 mL) test tubes. Cyclohexane (1 mL) was added and the sample blown down to 1 mL.

4.4.4 Mass Spectrophotometry Confirmation

Two samples from each matrix were selected (one from a treated site and one from the reference site). The samples were selected based on the number of detections as well as the apparent concentration of any selected compound. The MSD was run in select ion monitoring mode to increase sensitivity ~ 500 times and reduce problems associated with interfering coextractives.

4.4.5 Quality Assurance and Control Samples

We prepared a field replicate sample of soil, surface water, and sediment every tenth sample. No field blanks were prepared because the preservative was either dry or wet ice. The laboratory prepared matrix spike samples, method blanks, and equipment blanks per their internal Quality Assurance policy.

4.6 STATISTICAL ANALYSIS

Statistics were performed using SPSS for Windows Version 6.1. We used *t*-tests to compare chemical presence between Site 1 and Site 4, Site 2 and Site 4, and Site 3 and Site 4. We used one-way ANOVA to look for relationships among all 4 sites. Replicate observations were omitted from analyses because they would unfairly weight those sampling points that were replicated.

For the soil, surface water, sediment, and vegetation chemical analyses, a value of 0 was used if the data provided a detection limit rather than a specific value (for example, "<0.05"). This is a valid technique because our objective was to determine differences between sites, not to determine absolute amount of chemical present. Using 0 maximizes differences between sites with no chemical present and those with chemicals present. For example, if Site 1 has 0.051 ppm chemical present and Site 4 has 0 ppm, using the detection limit of 0.05 as the value for Site 4 would result in no difference between the two sites, whereas using 0 results in a difference. Using 0 minimizes the risk of not finding a difference when in fact there is one. The 0 value was used only for difference computations; raw data was presented as reported by laboratory analysis, with detection limits.

Analysis of soil, surface water, sediment, and vegetation was done using detection limit values to see if results changed and what these differences were. However, we summarized results only with comparisons using 0 values. For the soil data, we also did the analysis separating the samples into three equal depths.

In animal tissue analysis, detection limit values were used because detection limit values were inconsistent across all observations within a given group (for example:

detection limits among insect samples differed because of differences in sample sizes and different individuals conducting analyses).

4.7 SITE SIMILARITY INDEXES

We calculated two indices of similarity to compare transect and insect data from the same site and between exposure sites and the reference site. Both the Jacquard and Simpson index of similarity are calculated by using derivations of the formula described below. The closer a similarity index is to 1.0, the more similar the two samples are in species composition.

$$S = \frac{2C}{A+B}$$

Where:

S = Index of Similarity

C = Number of species common to both sites

A = Number of species in site A sample

B = Number of species in site B sample

4.8 FOG OIL SMOKE SAMPLES

On 2 and 3 October 1995, 3D/Environmental collected 12 samples of fog oil (smoke) from operating M157 and M56 generators at Fort McClellan, Alabama. Smoke samples were drawn by vacuum into 6-L Summa Air Canisters®. Summa Air Canisters were leased from Grasbey New Technologies of Smyrna, Georgia. Four samples were taken at each of the following locations: Range 24 A, Range 56, and the Pelham Range Vehicle Maintenance Facility (Table 5). One background sample was taken at each location 5 minutes prior to fog oil generator smoke production. Air temperature was recorded for all samples. Samples were analyzed by methods similar to those previously described in this document (Section 4.4) using a GC/MSD. Chromatograms of analysis are presented in Appendix F.

TABLE 5. Location, distance, and type of generator information for fog oil smoke samples.

Sample Number	Location	Distance	Generator
1	24 A	0 m*	XM 56
2	24 A	10 m	XM 56
3	24 A	20 m	XM 56
4	24 A	30 m	XM 56
5	Range 56	0 m*	M157
6	Range 56	0 m**	M157
7	Range 56	10 m	M157
8	Range 56	20 m	M157
9	Vehicle Maintenance Facility	0 m*	M157
10	Vehicle Maintenance Facility	10 m	M157
11	Vehicle Maintenance Facility	20 m	M157
12	Vehicle Maintenance Facility	20 m	M157

^{*}sample canister was placed at the base of the generator

^{**}sample canister was placed on top of generator unit near the fog oil smoke exit port

Section 5.0 Results/Discussion

5.1 INTRODUCTION

The results of chemical analyses are organized by media into tables in Appendix A. The following designations and site locations were used to identify samples from the 4 sites in this study.

- Site 1 = Range 24A (exposure site)
- Site 2 = Range 56 (exposure site)
- Site 3 = Battle Drill Area (exposure site)
- Site 4 = Choccolocco Creek (reference/control site)

We developed a sample identification scheme to distinguish samples by media, sample location, and sample order (Appendix A). Each tissue sample was given a 2 letter designation followed by the site number. TM was used for tissue mammal, TI was tissue insect, TF was tissue fish, TV was tissue vegetation, and TM# - G# indicates the site and bat number the guano sample was taken from. For example, TM1 - 12 is the tissue sample from the 12th bat caught at site 1. SW# designates surface water samples from site # and SD# represents sediment samples. Soil samples were taken at three depths. SU# was for 0" - 3", SM# was for 3" - 12", and SB# was 12" to 3' depths.

The following results and discussion summarize the statistical analysis performed on the media samples. One important aspect of the study was to compare results from exposure sites (sites 1, 2, and 3) to the reference site (site 4). Exposure site samples with

detectable concentrations of hydrocarbons were compared to the reference site to determine if any detected difference was statistically significant. Analytical detection limits were mg/L for all media except surface water. The detection limit used for surface water analysis was in μ g/L because drinking water tests methods were used. Drinking water standards and test methods have very low detection limits.

We also include a summary of statistical tests used to describe similarity of vegetation and insect communities between exposure sites and the reference site. When selecting a reference site, we tried to match soil types, percent canopy cover, vegetation, topography, water quality, etc.. Because limited sites on Fort McClellan were not impacted by training, our selection of the reference site was biased. The most suitable reference site was a section of Choccolocco Creek with a heavily traveled road and bridge crossing it. While no fog oil training had been conducted at this site, limited, non-intrusive training had occurred at this site. We were unable to determine the number of times this type of training had taken place at the reference site.

The following analysis focuses on differences in concentrations of hydrocarbons Comparisons of hydrocarbon between the exposure sites and reference site. concentrations between exposure sites and the reference site allow for the detection of high concentrations of hydrocarbons, with the reference site concentrations serving as background or ambient concentrations that could be found any where on the installation. One difficulty with this study is determining the exact source of hydrocarbons detected in samples. A causal relationship between exposure site/increase in fog oil hydrocarbons vs. reference site/little or no fog oil hydrocarbons may not be attributed solely to fog oil training. The exposure sites are for other types of training besides fog oil. Other obscurants such as hexachloroethane, brass, and terephthalic acid have been released at these sites. Different field and training maneuvers have been conducted at the exposure sites. The reference site has had non-intrusive training conducted there. Ideally, in order to compare exposure sites and the reference site, each exposure site should have had only fog oil smoke training conducted there and the reference site should have no training.

No fog oil (as whole oil) was detected in the samples. This indicates that fog oil (as a whole oil) is not accumulating in the environment. Analytical techniques and

methods used to test samples would have detected whole fog oil. Therefore, the absence of fog oil hydrocarbons, low concentrations found in a few samples, and the lack of whole fog oil in all samples, provide support that fog oil is not and will not bioaccumulate, bioconcentrate, or remain in the environment for any period of time. Hydrocarbons detected in the reference and exposure site samples are either natural background or from sources other than fog oil.

5.2 SOIL

Chemicals for which we analyzed (Table 4) either did not appear in soil samples, or were present in the same concentrations at exposure sites and the control site (Table 6). For the few chemicals where significant differences were found, the control site had greater concentrations of most chemicals. 2-Ethylanthracene, 1-Methylflourene, and 9,10-Dimethylanthracene showed differences between the exposure site and the control site with the control site having more of the chemicals. 1-Methylflourene and 9,10-Dimethyanthracene appear to be concentrated in the surface layer of the control site. 2-Ethylanthracene appears to be in the two top layers of the control site. The only exception was that the middle layer of Site 2 had more (p< 0.10) Hexadecane than the control site.

Chemical concentrations detected in soil samples from exposure sites were very low and not of concern. These low concentrations indicate no fog oil hydrocarbons are concentrating in the soil. When compared to the reference site, most exposure site chemical concentrations were lower. The reference site may have had greater detectable concentrations of fog oil hydrocarbons due to exhaust by-products from vehicles on the heavily traveled road or from stormwater runoff of contaminants on this road. Another possible source of hydrocarbons at the reference site could be from previous training material contamination.

5.3 SURFACE WATER AND STREAM SEDIMENT

Most chemicals either did not appear in the water samples or were present in the same amounts at the exposure sites and the control site (Table 7). For the chemicals where significant differences were found, all differences showed the control site having

TABLE 6. Results of fog oil component analysis for soil samples from all sites.

eejiS IIA	le	V		4	4		4	A	11		A	A	 	×	80	₹		
Bottom (DEPTH=3),	Z	Z	-	Z	Z	"	Z	Z	L	_	Z	Z	Z	Z	4	_		
(DEPTH=2) Middle (DEPTH=2) (AVONA)	₹	₹	11	≨	₹	2>1>4>3"	₹	≨	4>1>23**	11	II	"	16	₹	4>1>23	≨	=	
Surface (DEPTH=1), All Sites (AVONA)	≨	₹	ď	₹	₹	H	n	ı	4>1=2=3**	11	₹		11	11	4>1>2>3***	4>1=2=3**	11	
(DEPTH=3), Site 3 v. Site 4	₹	₹	11	₹	₹	11	≨	≨		11	≨	≨	≨	≨	4>3	≨	11	
Middle (DEPTH=2) Site 3 v. Site 4 (t-test)	≨	≨	"	₹	≨	#	≨	≨	4>3***	11	≨	GI .	II	≨	4>3#	≨	4>3	
(DEPTH=1), Site 3 v. Site 4	₹	≨	≨	≨	≨	16	≨	≨	4>3#	11	≨	81	ti.	11	453**	453	u	
Bottom (DEPTH=3), Site 2 v. Site 4 (t-test)	≨	≨	11	≨	≨	#	≨	₹	"	t1	₹	≨	≨	≨	4	≨	11	
		≨	H	≨	≨	2>4•	≨	≨	11	11	2 4•	11	=	≨	11	≨	11	
Surface (DEPTH=1), Site 2 v. Site 4 (t-test)	₹	₹	₹	≨	₹	Ħ	н	≨	4>2.	11	≨	Ħ	11	tı	4> 2•	4>2	4>2*	
Bottom (DEPTH=3), Site 1 v. Site 4	≨	¥	#1	¥	₹	H	₹	≨	Ħ	11	₹	¥	≨	≨	4>1*	¥	Ħ	
	₹	₹	H	≨	₹	н	₹	≨	11	u	11	н	H	≨	11	₹	н	
Surface (DEPTH=1), Site 1 v. Site 4	¥	₹	11	₹	₹	ŧı	¥	11	4>1**	tt	≸	11	Ħ	#	4>1**	4>1	11	
eetiS IIA (AVONA)	₹	≱	11	¥	≸	11	ĸ	#	4>1>2>3***	88	11	11	11	H	4>1>2>3	4>1=2=3*	11	
Site 3 v. Site 4 (t-test)	≨	≨	H	≨	≨	4>3*	≨	¥	4>3***	11	≨	ti	u			₽3	4>3	
Site 2 v. Site 4 (t-test)	≸	≨	11	≨	≨	11	11	¥	4>2***	11	254.	11	"			4>2	=	
Site 1 v. Site 4 (t-test)	≱	≨	11	≨	≨	#	≨	ii	4>1**	ĸ	11	H	11	11	4>1#	* +	11	
Chemical	Bipheny	2,6-Dimethylnaphalene	1,3-Dimethylnaphalene	1,2-Omethylnaphalene	2,3,5-Trimethylnaphalene	Hexadecane	Fluorene	4,4-Dimethylbipheny	1-Methyfluorene	Phenanthrene	Anthracene	2-Methyphenanthrene	9-Methylanthracene	3,6-Dimethylphenanthrene	2-Ethylanthracene	9,10-Dirnethylanthracene	Herachtoroethene	
	A Site A Site A Site B	A Site 3 v. Site 4 site 2 v. Site 3 site 3 v. Site 4 site 3 v. Site 3 v. Site 4 site 2 v. Site 3 v. Site 4 site 2 v. Site 4 site 2 v. Site 4 site 3 v. Site 3 v. Site 4 site 3 v. Site 3 v. Site 4 site 3 v. Site 3 v. Site 4 site 3 v. Site 3 v. Site 4 site 3 v. Site 3 v. Site 3 v. Site 4 site 3 v. Site 3 v. Site 4 site 3 v. Site 3 v. Site 3 v. Site 4 site 3 v. Sit	A A Site 3 v. Site 4 C ANOVA) A Site 3 v. Site 4 C ANOVA A Site 4 v. Site 4 C ANOVA A Site 3 v. Site 4 C ANOVA A Site 4 v. Site 4 C ANOVA A Site 3 v. Site 4 C ANOVA A Site 4 v. Site 4 A Site 3 v. Site 4 C ANOVA A Site 3 v. Site 4 A Site 4 v. Site 4 A Site 3 v. Site 4 A Site 4 v. Site 4 A Site 4 v. Site 4 A Site 4 v. Site 4 A Site 6 v. Site 4 A Site 7 v. Site 4 A Site 7 v. Site 4 A Site 6 v. Site 6 A Site 7 v. Site 6 A Site 6 v. Site 6 A Site 7 v. Site 6 A Site 6 v. Site 6 A Site 6 v. Site 6 A Site 7 v. Site 6 A Site 7 v. Site 6 A Site 6 v. Site 6 A	A A A Bottom A Bottom A A A Bottom A Bottom A Site 3 v. Site 4 a Site 1 v. Site 4 b Site 2 v. Site 4 b Site 2 v. Site 4 c. (1-test) A Middle (DEPTH=3), Site 4 c. (1-	A	A	## A P PATE OF	## A P PATH	A	A	A A A A A A A A A A	## A P P P P P P P P P P P P P P P P P P	A sing in the proof of the pr	### ### ### ### ### ### ### ### ### ##	### ### ### ### ### ### ### ### ### ##	### ### ### ### ### ### ### ### ### ##	A	Cantidaction Captidaction Capt

Site numbers refer to sites (1=Range 24A, 2=Range 56, 3=Battle Drill Area, and 4=Choccolocco Creek) NA - There were either no observations or no variance in the observations (all chemical

concentrations were below detection limit)

There is no statistical difference between the sites;

*** - Statistically significant difference (p < 0.01); ** - Statistically significant difference (p < 0.05);

* - Statistically significant difference (p < 0.10); > - Indicates which site had the greater value.

TABLE 7. Results of fog oil component analysis for water samples from all sites.

SURFACE WATER	Site 1 v. Site 4 (t-test)	Site 2 v. Site 4 (t-test)	Site 3 v. Site 4 (t-test)	All Sites (ANOVA)
Chemical				
Biphenyl	NA	NA	NA	NA
2,6-Dimethylnaphalene	NA	NA	NA	NA
1,3-Dimethylnaphalene	NA	NA	NA	NA
1,2-Dimethylnaphalene	NA	NA	NA	NA
2,3,5-Trimethylnaphalene	=	=	=	=
Hexadecane	4>1**	4>2**	4>3**	4>1=2=3**
Fluorene	4>1**	4>2*	=	=
4,4'-Dimethylbiphenyl	NA	NA	NA	NA
1-Methylfluorene	=	=	=	=
Phenanthrene	NA	=	=	=
Anthracene	=	=	=	=
2-Methylphenanthrene	NA	NA	NA	NA
9-Methylanthracene	4>1**	=	4>3**	=
3,6-Dimethylphenanthrene	NA	NA	NA	NA
2-Ethylanthracene	4>1**	4>2**	4>3**	4>1=2=3**
9,10-Dimethylanthracene	4>1*	4>2*	4>3*	4>1=2=3**
Hexachloroethane	NA	NA	NA	NA

Site numbers refer to sites (1=Range 24A, 2=Range 56, 3=Battle Drill Area, and 4=Choccolocco Creek)

NA - There were either no observations or no variance in the observations (all chemical concentrations were below detection limit)

- = There is no statistical difference between the sites;
- *** Statistically significant difference (p < 0.01);
- ** Statistically significant difference (p < 0.05);
- * Statistically significant difference (p < 0.10);
- > Indicates which site had the greater value.

more of the chemical. General characteristics of stream water and sediments are listed in Appendix B.

The control site had greater concentrations of Hexadecane, 2-Ethylanthracene, and 9,10-Dimethylanthracene than all exposure sites. The control site had more Flourene than Site 1 or Site 2, and the control site had more 9-Methylanthracene than Site 1 or Site 3.

Few significant differences in concentrations were found in sediment analyses (Table 8). Hexadecane was present in greater quantities at the control site than Site 1. Phenanthrene was more prevalent at Site 3 than the control (p < 0.10). 2-Ethylanthracene was present in greater quantities at Site 2 than the control site (p < 0.01), but the control site had greater concentrations than Site 3 (p < 0.10).

TABLE 8. Results of fog oil component analysis for sediment samples from all sites.

	1	1		i .
SEDIMENT				
	4	4	4	
	Site 1 v. Site 4 (t-test)	Site 2 v. Site 4 (t-test)	Site 3 v. Site 4 (t-test)	v 2
	St) Si	St Si	S.	All Sites (ANOVA)
	> -	- c	-te <	S S
	e 1	e 2	(e 3	₹ ₹
	Sit	Sit	Sit	
	1			
Chemical				
Biphenyl	NA	NA	NA	NA
2,6-Dimethylnaphalene	NA	NA	NA	NA
1,3-Dimethylnaphalene	NA	NA	NA	NA
1,2-Dimethylnaphalene	NA	NA	NA	NA
2,3,5-Trimethylnaphalene	NA	NA	NA	NA
Hexadecane	4>1***	=	=	=
Fluorene	NA	NA	NA	NA
4,4'-Dimethylbiphenyl	NA	NA	NA	NA
1-Methylfluorene	=	=	=	=
Phenanthrene	NA	NA	3>4*	3>4=1=2**
Anthracene	=	=	=	=
2-Methylphenanthrene	=	=	=	=
9-Methylanthracene	NA	NA	NA	NA
3,6-Dimethylphenanthrene	=	NA	NA	1>4=2=3*
2-Ethylanthracene	=	2>4***	4>3*	1>2>4>3**
9,10-Dimethylanthracene	NA	NA	NA	NA
Hexachloroethane	=	=		=

Site numbers refer to sites (1=Range 24A, 2=Range 56, 3=Battle Drill Area, and 4=Choccolocco Creek)

NA - There were either no observations or no variance in the observations (all chemical concentrations were below detection limit)

^{= -} There is no statistical difference between the sites;

^{*** -} Statistically significant difference (p < 0.01);

^{** -} Statistically significant difference (p < 0.05);

^{* -} Statistically significant difference (p < 0.10);

> - Indicates which site had the greater value.

Chemical concentrations detected in surface water and sediment samples from exposure sites were very low and not of concern. These low concentrations indicate no fog oil hydrocarbons are concentrating in surface water or sediment at exposure sites. When compared to the reference site, most exposure site chemical concentrations were lower. The reference site may have had greater detectable concentrations of fog oil hydrocarbons due to the gasoline/diesel by-products from exhaust of vehicles traveling on the road crossing the creek. Another source could be from training conducted at the site.

We performed water quality field tests at each surface water sample location and described the appearance of sediment samples. The purpose of this sampling was to provide additional information about stream characteristics, and to provide a tool to compare water chemistry at each site in case we found high concentrations of hydrocarbons at one particular site. The pH ranged from 6.4 to 8.4 (Appendix B). Sites 4 and 1 had lower TDS, hardness, and turbidity than sites 2 and 3 (Appendix B). Overall, water quality appeared to be good at all sample locations.

5.4 VEGETATION

There was no statistically significant difference in concentrations of fog oil hydrocarbons in samples from exposure sites and the reference site (Table 9). The two exceptions were 1,3-Dimethylnaphalene where Site 1 had more than the control site (p < 0.05), and 9,10-Dimethylanthracene where Site 1 had more than the control site (p < 0.10).

Chemical concentrations detected in bark and leaf samples from exposure sites were very low and not of concern. These low concentrations of hydrocarbons indicate no fog oil hydrocarbons are concentrating in plant tissue at exposure sites. When compared to the reference site, most exposure site chemical concentrations were lower. The reference site may have had greater detectable concentrations of hydrocarbons because of vehicles and their exhaust. A heavily traveled road crosses the creek on the site. Another source could be from non-fog oil training that was conducted on the site.

TABLE 9. Results of fog oil component analysis for plant tissue samples from all sites.

VEGETATION				
	Site 1 v. Site 4 (t-test)	Site 2 v. Site 4 (t-test)	Site 3 v. Site 4 (t-test)	All Sites (ANOVA)
Chemical				
Biphenyl	=	=	=	=
2,6-Dimethylnaphalene	=	=	NA	=
1,3-Dimethylnaphalene	1>4**	=	=	=
1,2-Dimethylnaphalene	=	=	=	=
2,3,5-Trimethylnaphalene	Ė	=	=	1>2>3>4*
Hexadecane	=	=	=	=
Fluorene	=	=	=	=
4,4'-Dimethylbiphenyl	=	=	=	=
1-Methylfluorene	=	=	=	=
Phenanthrene	=	=	=	=
Anthracene	=	=	=	=
2-Methylphenanthrene	=	=	=	=
9-Methylanthracene	=	=	=	=
3,6-Dimethylphenanthrene	=	=	=	=
2-Ethylanthracene	=	=	=	=
9,10-Dimethylanthracene	1>4*	=	=	1>2>3>4**
Hexachloroethane	NA	NA	NA	NA

Site numbers refer to sites (1=Range 24A, 2=Range 56, 3=Battle Drill Area, and 4=Choccolocco Creek)

NA - There were either no observations or no variance in the observations (all chemical concentrations were below detection limit)

- = There is no statistical difference between the sites;
- *** Statistically significant difference (p < 0.01);
- ** Statistically significant difference (p < 0.05);
- * Statistically significant difference (p < 0.10);
- > Indicates which site had the greater value.

Descriptions of tree species and tree diameters in belt transects at sample sites are contained in Appendix C. Shannon Diversity Indexes calculated revealed little diversity in all transects (Table 10). The Shannon Diversity Index increases with diversity.

Transects at sample sites had few similar tree species. Half the transects had similarity index values below 0.5. Simpson's Index of Similarity approaches 1.0 as similarity increases. Simpson's Similarity Indices for the 8 transects are presented in Table 11. Variability within and between sites is due largely to the small number of transects.

TABLE 10. Comparisons of diversity among sites using data collected from vegetation transects.

Site	Transect	Shannon Diversity Index*
Range 24 A	1	2.366
Range 24 A	2	2.250
Range 56	1	1.309
Range 56	2	2.322
Battle Drill Area	1	2.493
Battle Drill Area	2	1.122
Choccolocco Creek	1	1.848
Choccolocco Creek	2	1.999

^{*}Diversity values closer to 1 indicate a less diverse or a more equitable community.

TABLE 11. Simpson's Similarity Indices* calculated for vegetation transect data collected at each site.

Transect Location and Number	Choccolocco Creek - 1	Choccolocco Creek - 2
Range 24 A - 1	0.0952	0.0455
Range 24 A - 2	0.0952	0.0455
Range 56 - 1	0.1765	0.3333
Range 56 - 2	0.1579	0.2222
Battle Drill Area - 1	0.2778	0.2778
Battle Drill Area - 2	0.2353	0.1765
Choccolocco Creek - 1		0.2778

^{*} Similarity between samples increases as the index value approaches 1.0.

5.5 INSECTS

Analytical results and analysis of insects collected from all four sites are presented in Appendix D. There were no statistically significant differences for any compounds detected in insect tissue between exposure sites and the reference site (Table 13). Concentrations of fog oil hydrocarbons detected in insect samples were very low and not of concern.

We compared the number of insect Orders at exposure sites and the reference site. Community composition was similar among all sites (Table 12). The same taxa (orders) were present at each site (Appendix D). Simpson's Similarity Indices were greater than 0.7 when comparing community composition of reference and exposure sites (Table 12). There were more insects collected at the reference site. Site 3 had the fewest number of individuals and the fewest orders. Evenness was similar among all sites.

A major difference noted between insects at exposure sites and insects at the reference site was the number of Coleoptera. The reference site had 5 times more Coleoptera than any exposure site. There are several reasons this could occur. Habitat suitability for coleopterans may have been higher at the reference site. The reference site had more surface water habitat perfered by aquatic coleopterans than exposure sites. It is doubtful fog oil is the determining factor because other characteristics of insect populations were similar (i.e. number of orders, Simpson's Similarity Index, and eveness).

TABLE 12. Results of insects analysis performed to determine similarity of insect orders and communities collected at 4 sites.

	Site 1	Site 2	Site 3	Site 4- reference
Total Individuals	285	287	179	948
Number of Orders	11	9	8	11
Diversity	6.3484	6.3435	5.8417	7.4521
Evenness	2.6475	2.8871	2.8093	3.1078
JSC Similarity with Site 4	0.8333	0.8182	0.7273	
Index of Similarity	0.9091	0.9000	0.8421	

5.6 ANIMAL TISSUE

The analysis of bat tissue revealed significantly higher concentrations of many chemicals at exposure sites (Table 13). Hexadecane was present in greater amounts at Site 3 than the control site (p < 0.10). Biphenyl, Hexachloroethane, 2,6-Dimethylnaphalene, 1,3-Dimethylnaphalene, 1,2-Dimethylnaphalene, and 2,3,5-Trimethylnaphalene were present in significantly greater amounts at Site 2 (p < 0.10) and Site 3 (p <0.01) than the control site. While this appears to be indicative of fog oil concentrating in bat tissue, the concentrations detected were very low (Appendix A). These levels were close to the detection limit and may be biochemical in origin. Different hydrocarbons may peak on chromatograms at the same retention time as the compounds being analyzed. Biological samples are high in hydrocarbon content and with such low concentrations, it is assumed these are not from fog oil but a natural component of tissue. We do not expect any of the fog oil hydrocarbons will accumulate in bat tissue.

No statistically significant differences were determined for bat guano, insect tissue, and fish tissue samples from exposure sites vs. the reference site (Table 13). Many statistical tests could not be completed because samples existed for only one site or hydrocarbon concentrations were below detection limit. The tests that could be completed showed no significant differences between the exposure sites and the reference site.

5.7 FOG OIL SMOKE SAMPLES

We detected little difference in volatile and semi-volatile organic compounds between 9 smoke samples and background air samples. We analyzed all fog oil smoke samples for any detectable organic compounds. Analyses show concentrations of parent fog oil (fog oil put into the generator to generate smoke) in the smoke samples to be >99.2%. No aromatic, volatile, or semi-volatile organic compounds were detected at concentrations >0.8% in the smoke samples.

TABLE 13. Results of fog oil component analysis for bat, fish, insect tissue and guano samples from all sites.

, Fish, All Sites (AVONA)			Ϋ́	ΑN	Ϋ́	ΑN	11				Ħ	Ħ	Ħ	a	#	H	1		FI	ar	¥ Z
Fish, Site 3 v. Site 4 (t-test)	8		Ϋ́	Ϋ́	ž	¥	H	41	1	11	ti l	H	II	11	31	к			ĸ		¥
, rich, 6 2 v. Site 4 (t-test)	3		ž	¥	¥	¥	Ϋ́				11	н	Ħ	đị.	11	11			"	4	_ ¥
, Fish, Site 1 v. Site 4 (t-test)	1	414	ξ.	ď.	ΑN	Ϋ́	ΑN	ΑN	ΔN		¥2	¥	۷	ΝA	NA	ΥN	AN	414	ξ.	Ψ.	¥
insects, All Sites (AVONA)			1	*	n	a	11	8	H			sı	u	#	61	Ħ	11		-	H I	Ħ
Insects, Site 3 v. Site 4 (t-test)		1		H		Ħ	ti	Ħ	Ħ	ŧ	1	1	n	¥	Ħ	11	Ħ				1
Insects, Site 2 v. Site 4 (t-test)					н	H	B	H	ı	H		4	H	EI .	n	Ħ	Ħ	11		1 1	-
Insects, Site 1 v. Site 4 (t-test)		u		•	11	H	Ħ	ŧı	11	ı	,		n	11	11	II .	a	ш	61	1 1	
onsug bag. Siles (AVONA)		u	1	1	•	И	ti	11	ŧı	=			•	ti	11	ä	tı	#	a	н	
onsug tsB. Site 3 v. Site 4. (t-test)		AA	ΔN	Q N	2	Ž	ΑN	NA	Ϋ́	Ϋ́	ΔN	(N	2	¥ .	₹:	Y.	¥	¥	AN	AA	
Gat guano, Site 2 v. Site 4 (t-test)		и	=	4		Ħ	H	п	11	ı	ıı	61		11		lt	ŧŧ	Ħ	Ħ	B	
Bat guano, Site 1 v. Site 4 (t-test)		Ϋ́	ΑN	Ą	44	2	Y.	ΥN	Ϋ́	ΥN	AN	AN	VIV.	2 2	¥ 2	ξ.	٧V	ž	Ϋ́N	¥	
euszit tsB sites IIA (AVONA)		3>2>1>4	3>2>1>4*	3>2>1>4*	35.35.45.4	20.00	3>2>1>4	11	ŧŧ	3>2>1>4*	"	II	ti	. ,			Ħ	H	11	3>2>1>4	
,eusat tisa Site 3 v. Site 4 (teest)		3>4***	3>4***	3>4***	354444		374	3>4	11	3>4***	n	n n	4	•			n	Ħ	n	3>4***	
,euszit ts8 Site 2 v Setie 4 (teest)		2>4*	2>4*	2>4*	2>4.		4/7	11	Ħ	2>4*	11	H	H	R	1 11		,	ti	u	2>4*	
elist tissue, Site 1 v. Site 4 (t-test)		u	Ħ	H	H		•		EI	IJ	ti	H	11	II	ı	ı		Ħ	H	H	
TISSUE & GUANO	Chemical	Biphenyl	2,6-Dimethylnaphalene	1,3-Dimethylnaphalene	1.2-Dimethylnaphatene	2 3 5. Trimethydranhalana	Linear Management	Texadecate	Fluorene	4.4'-Dimethylbiphenyl	1-Methyffluorene	Phenanthrene	Anthracene	2-Methylphenanthrene	9-Methylanthracene	3 & Director of the contraction of	C.O. Collinear graphical carlo	2-Ethylanthracene	9,10-Dimethylanthracene	Hexachloroethane	
	Bat guano, Cheest) Bat sissue, Cit-test) Bat sissue, Cit-test) Bat sissue, Cit-test) Bat guano, Cit-test) Cite 3 v. Site 4 Citest) Bat guano, Cit-test) Cite 3 v. Site 4 Citest) Cite 3 v. Site 4 Citest) Citest Cit	Bat guano, Cl-test) Bat issue, Cl-test) Bat issue, Cl-test) Bat issue, Cl-test) Bat guano, Cl-test) Cl-test) Bat guano, Cl-test) Fish, All Sites	Water treaty of the state of th	## Sat guano. Sat sisses. Sat sisses.	Bat guano. A NA A A Part Site 4 Bat issue, a bat sise 4 Bat guano. Chooly A A Site 4 Bat guano. A A A Site 4 Bat guano. Bat guano. Bat guano. Bat guano. Bat guano. A A Site 4 Bat guano. Bat guano. Bat guano. A A Site 4 Bat guano. Bat guano. Bat guano. Bat guano. A A Site 4 Bat guano. Bat guano. Bat guano. Bat guano. A N A A Site 4 Bat guano. Bat gu	Bat guano. A Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	A NA A A Part Sites 4 A Site 3 v. Site 4 Bat guano, A Site 4 Cireat) A Site 3 v. Site 4 Cireaty A NA A A A Site 4 Cireaty A NA A A A Site 4 Cireaty A NA A A A A Site 4 Cireaty A NA A A A A Site 4 Cireaty A NA A A A A Site 4 Cireaty A NA A A A A Site 4 Cireaty A NA A A A A A A A A A A A A A A A A A	Bat guano. Colored	### ### ### ### ### ### ### ### ### ##	H	Compact Comp	1	1	Heart issue Heart issue	Hart Hart Hart Hart Hart Hart Hart Hart	Site 2 V. Site 4 Site 2 V. Site 4 Site 3 V. Site 4 Site 3 V. Site 4 Site 4 Site 5 V. Site 6 Si	Step 1	A Single Street, Sing	Sale 2 V. Site 4 Sale 1 Sale 1 Sale 1 Sale 2 V. Site 4 Sale 1 Sale 1 Sale 1 Sale 2 V. Site 4 Sale 1 Sale 1 Sale 2 V. Site 4 Sale 1 Sale 2 V. Site 4 Sale 2 V. Site 4 Sale 1 Sale 2 V. Site 4 Sale 1 Sale 2 V. Site 4 Sale 2	September Sept	Septiment Sept

Site numbers refer to sites (1=Range 24A, 2=Range 56, 3=Battle Drill Area, and 4=Choccolocco Creek)
NA - There were either no observations or no variance in the observations (all chemical

concentrations were below detection limit)

= - There is no statistical difference between the sites;

*** - Statistically significant difference (p < 0.01);

** - Statistically significant difference (p < 0.05);

> - Indicates which site had the greater value.

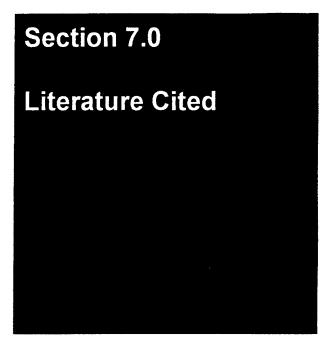
Fog oil smoke samples demonstrate a shift in the molecular weight of the unspeciated hydrocarbons when compared to parent fog oil samples. After fog oil has been heated in the generator, heavier hydrocarbons (i.e. C_{10} - C_{50}) increase in number while lighter hydrocarbons (i.e. $< C_{10}$) decrease. The most likely explanation for this shift in molecular weight of hydrocarbons present is volatilization. Lighter hydrocarbons volatilize to form CO_2 , H_2 , CO, and other atmospheric gases not measured in the smoke samples.

A summary of chromatograms, test methods, and standards for fog oil smoke samples used in the analysis are presented in Appendix F.

Section 6.0 Conclusion

- There was little evidence that fog oil components persist in soil, sediment or surface water. Either little or no difference was observed between exposure sites and the reference site, or the reference site had higher concentrations of hydrocarbons than exposure sites.
- 2. The reference site was suitable for analyses based on similarity of insects, soil types, and lack of fog oil training.
- 3. We found no evidence of large concentrations of hydrocarbons in tissue samples. If bioaccumulation was occurring at exposure sites, organisms analyzed should have exhibited hydrocarbons in their tissue. Results of this study indicate no bioaccumulation of fog oil is occurring at Fort McClellan.
- 4. Fog oil smoke samples showed little change in chemical composition compared to parent fog oil. We were unable to detect any volatile or semi-volatile organics in our smoke samples. If volatilization or thermal decomposition occurs, they either result in low concentrations of decomposition or volatilization products, or only form atmospheric gases.

5. Hydrocarbons specific to fog oil were not found in significant quantities in any samples. We analyzed samples for hydrocarbons known to have a long environmental residence time. Based on our analysis, fog oil will not bioconcentrate, bioaccumulate, or biomagnify in the environment or biota at Fort Leonard Wood.



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Appendix A

Laboratory Data, Forms, and Analyses

FORT McCLELLAN SAMPLING PROCEDURES

- Every ten samples of media (soil, sediment, water), a replicate will be taken and labeled "dup" (ie. SW4-dup-#). Sample location will be the same as 10th sample.
- •Be sure to keep accurate records in field notebooks
- Wear gloves at all times to avoid contamination
- •Do not wear aftershave or lotion

SAMPLE IDENTIFICATION AT EACH SITE SITE 1 - RANGE 24A - (exposure)

Tissues

mammals TM1 - (capture #)
bat guano TM1 - G (capture#)
insects (black light) TI1 - B - (sample #)
insect (white light) TI1 - W -(sample#)

fish TF1 - (number)

vegetation TV1 - (sample location)

<u>Surface Water</u> SW1 - (sample location)

Sediment SD1 - (sample location)

Soil surface (0-3") SU1 - (sample location) middle (3-12") SM1 - (sample location) bottom (12"-3') SB1 - (sample location)

SITE 2 - RANGE 56 - (exposure)

Tissues

mammals TM2 - (capture #)
guano TM2 - G - (capture#)
insects (black light) TI2 - B - (sample #)
insect (white light) TI2 - W - (sample#)

fish TF2 - (number) vegetation TV2 - (sample location)

Surface Water SW2 - (sample location)

Sediment SD2 - (sample location)

Soil	surface (0-3")	SU2 - (sample location)
	middle (3-12")	SM2 - (sample location)
	bottom (12"-3')	SB2 - (sample location)

SITE 3 - BATTLE DRILL AREA - (exposure)

Tissues

mammals TM3 - (capture #)
bat guano TM3 - G (capture#)
insects (black light) TI3 - B - (sample #)
insect (white light) TI3 - W -(sample#)
fish TF3 - (number)

vegetation TV3 - (sample location)

Surface Water SW3 - (sample location)

Sediment SD3 - (sample location)

Soil surface (0-3") SU3 - (sample location) middle (3-12") SM3 - (sample location)

bottom (12"-3') SB3 - (sample location)

SITE 4 - RANGE 13 (control/reference site)

Tissues

mammals TM4 - (capture #)
guano TM4 - G - (capture#)
insects (black light) TI4 - B - (sample #)
insect (white light) TI4 - W -(sample#)
fish TF4 - (number)

vegetation TV4 - (sample location)

Surface Water SW4 - (sample location)

Sediment SD4 - (sample location)

Soil surface (0-3") SU4 - (sample location)

middle (3-12") SM4 - (sample location) bottom (12"-3') SB4 - (sample location)

New N	şib penyl	ənəlariqaniyinənici-ə,	ensladqanlydaslene	L,2-Dimethylnaphalene	ənəlenqanıylınaphalene	Нехафесапе	Епосере	4,4°-Dimethylbiphenyl	1-МетруіПьотепе	Ръспандиспе
Range 24a	1	č								
47818-044 SUII-1-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05
42818-027 SM1-1-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	0.0680	< 0.05
42819-045 8111-2-816	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05
42818-046 SI 11-24-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
42818-023 SM1-2-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
42818-003 SB1-2-816	<0.05	<0.05	<0.05	<0.05	<0.05	0.631	< 0.05	<0.05	<0.05	<0.05
42819-047 ST11-3-816	<0.05	<0.05	0.245	<0.05	<0.05	0.0891	<0.05	<0.05	<0.05	< 0.05
47818-074 SM1-3-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
42010-004 CB1-3-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05
42010-040 5111-2-516	<0.05	<0.05	0.373	< 0.05	<0.05	0.194	<0.05	0.0827	<0.05	<0.05
42818-026 SM1-4-816	<0.05	<0.05	<0.05	<0.05	<0.05	0.0556	<0.05	<0.05	0.0859	0.0564
42818-005 SB1-4-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0748	<0.05
42818-050 SUI-5-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
47818-027 SM1-5-816	<0.05	<0.05	<0.05	<0.05	<0.05	0.486	< 0.05	<0.05	<0.05	<0.05
47818-078 SM1-54-816	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05
47918-004 SB1-5-816	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05
918-9-118 119-8-16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
42818-029 SM1-6-816	<0.05	<0.05	< 0.05	<0.05	<0.05	0.436	<0.05	<0.05	<0.05	<0.05
42818-007 SB1-6-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
200 0000										

Sample Name	Апітвспе	у. -Менуурынанене	9-Мейуу гант эсепе	3,6-Dimethylphenanturene	2-Ейууівлійтаселе	9,10-Dimethylanthracene	Нехасиютоспапе
Range 24a							
42818-044 SU1-1-816	<0.05	<0.05	<0.05	<0.05	0.0535	<0.05	<0.05
42818-022 SM1-1-816	0.0519	<0.05	<0.05	<0.05	0.0533	<0.05	<0.05
42818-045 SUI-2-816	<0.05	<0.05	< 0.05	< 0.05	0.185	<0.05	< 0.05
42818-046 SU1-2d-816	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05
42818-023 SM1-2-816	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05
42818-003 SB1-2-816	<0.05	< 0.05	< 0.05	<0.05	0.0816	<0.05	<0.05
42818-047 SUI-3-816	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	0.154
42818-024 SM1-3-816	<0.05	0.0775	<0.05	<0.05	0.126	<0.05	< 0.05
42818-004 SB1-3-816	<0.05	< 0.05	<0.05	<0.05	0.0721	<0.05	<0.05
42818-048 SU1-4-816	<0.05	< 0.05	<0.05	<0.05	0.0978	<0.05	0.285
42818-026 SM1-4-816	0.127	0.0973	0.0515	<0.05	0.0840	<0.05	0.940
42818-005 SB1-4-816	<0.05	< 0.05	< 0.05	<0.05	0.0614	< 0.05	< 0.05
42818-050 SU1-5-816	<0.05	< 0.05	<0.05	<0.05	0.0513	<0.05	<0.05
42818-027 SM1-5-816	<0.05	< 0.05	<0.05	<0.05	0.0626	<0.05	0.0951
42818-028 SM1-5d-816	<0.05	<0.05	<0.05	<0.05	0.0538	<0.05	0.259
42818-006 SB1-5-816	<0.05	<0.05	< 0.05	<0.05	0.0666	<0.05	< 0.05
42818-051 SU1-6-816	<0.05	< 0.05	<0.05	< 0.05	0.0514	<0.05	0.143
42818-029 SM1-6-816	<0.05	< 0.05	<0.05	<0.05	0.0604	<0.05	0.410
42818-007 SB1-6-816	<0.05	<0.05	<0.05	<0.05	0.0533	<0.05	<0.05

Samule Name) iphenyl	onstandeniyinanid-0,	,3-Dimethylnaphalene	,2-Dimethylnaphalene	-5,5,7-Trimethylnsphatene	ехадесеть	јполење	lynəriqidiydəmid\$.	-МейуШиотепе	penanturene	лидаесис
Range 24a	H	r	I	I	z l	I	1	Þ	I	đ	7
42818-201 SW1-1-816	<1.0	<1.0	<1.0	<1.0	1.10	<1.0	1.92	<1.0	<1.0	<1.0	1.03
42818-202 SWI-2-816	<1.0	0.1>	<1.0	<1.0	1.13	<1.0	1.92	<1.0	<1.0	<1.0	<1.0
42818-203 SWI-3-816	<1.0	<1.0	<1.0	<1.0	1.21	<1.0	4.05	<1.0	<1.0	<1.0	1.29
Sample Name	у-Мефурманду гос	9-Мећуј аліът асепе	3,6-Dimethylphenanthrene	Z-Ethylanthracene	9,10-Dimethylantracene	Hexachloroethane					·
Range 24a											
42818-201 SW1-1-816	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0					7
42818-202 SW1-2-816	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0					
42818-203 SW1-3-816	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0					

пілізсепе	V	***	50.0	6.0	\$0.0						
	-				1		\downarrow	+		-	-
репяпансые	ď	\$0.05	\$0.05	\$000	\$0.0>						
-МейуШиопеве	I	<0.05	\$0.0>	\$0.05	<0.05						
l,4°-Dimethylbiphenyl	>	<0.05	<0.05	>0 0\$	<0.0\$						
Jnotene	I	<0.05	<0.05	<0.03	<0.05						
Техадесапе		<0.05	<0.05	<0.05	<0.05	Нехасьногостране		0.0562	0.133	<0.05	0.0845
-c.t.imethylnaphalene		<0.05	<0.05	<0.05	<0.05	9,10-Dimethylanthracene		<0.05	<0.05	<0.05	<0.05
1,2-Dimethylnaphalene		<0.05	<0.05	<0.0\$	<0.05	2-Ейууізаны эсепе		0.133	<0.05	0.422	<0.05
1,3-Dimethylnaphalene		<0.05	<0.05	<0.05	<0.05	3,6-Dimethylphenanthrene		<0.05	<0.05	0.198	<0.05
ənəladqanlyhəmiG-Ə,2		<0.05	<0.05	<0.05	<0.05	9-Метруізлійласепе		<0.05	<0.05	<0.0\$	<0.0\$
Biphenyl		<0.05	<0.0\$	<0.05	<0.05	у-үүсүүү урсияндилгис		<0.05	<0.05	0.147	<0.05
Sample Name	Range 24a	42818-100 SDI-1-816	42818-101 SD1-2-816	42818-102 SDI-3-816	42818-103 SD3-1-816	Sample Name	Range 24a	42818-100 SD1-1-816	42818-101 SD1-2-816	42818-102 SD1-3-816	42818-103 SD3-1-816

	Τ-		·	1	i		!			
уп длясс ие		0.114	0.0949	091.0						
Брепапдиспе		0.120	0.159	0.314						
I-Methylfluorene		0.122	0.111	0.158						
lynədqidiydəmiQ-'4,4		0.0647	<0.0\$	0.347						
Fluorene		0.101	0.0920	0.492						
Hexadecane		0.0786	0.240	0.870		Hexachioroethane		<0.05	<0.05	< 0.05
ənəlarlqaniyinəmirT-2,5,5,		0.0645	1.137	1.548		9,10-Dimethylanthracene		0.516	0.190	0.369
ənəladqaniyinəmid-2,1		<0.05	0.268	2.856		2-Ethylanthracene		0.358	2.779	0.377
3.3-Dimethylnaphalene		0.250	0.800	0.675		ənərdnenəddiydəmid-ə,£		0.243	091.0	0.278
2,6-Dimethylnaphalene		<0.05	<0.05	0.234		Э-Метуулапичасепе		0.289	0.244	0.327
Biphenyl		0.898	0.253	0.0673		у-Метууірдепалійтеле		0.299	0.245	0.309
Sample Name	Range 24a	42818-264 SV1-2-816	42818-265 SV1-3-816	42818-266 SV1-1-816		Sample Name	Range 24a	42818-264 SV1-2-816	42818-265 SVI-3-816	42818-266 SVI-1-816

літасепе	٧		90	20.00	60.02	0000	00207	0.0430	_								
	-			+	+	-	-										-
репалішене	ď		03 07	0 0430	20.0	0.173	7/1:5	0.07									
-уусдуудломене	ī		05.0>	2002	80.07	0 200	0 0454	10.00									
, фDimethylbiphenyl			<0.50	<0.03		\$0 0>	¥0 0>	1000									
Inorene	I		<0.50	< 0.03		0.236	0.0659										
Нехадесале			<0.50	<0.03		<0.0>	<0.04			Hexachioroethane			<0.50	< 0.03		<0.0>	<0.04
əmisaqəsiniyinəmirT-2,.5,2			<0.50	< 0.03		<0.0>	<0.04			9,10-Dimethylanthracene			<0.50	< 0.03		<0.09	<0.04
1,2-Dimethylnaphalene			<0.50	< 0.03		<0.0>	<0.04			2-Ethylantmacene			1.318	0.0868		0.525	0.284
1,3-Dimethylnaphalene			<0.50	< 0.03		<0.0>	<0.04			3,6-Dimethylphenanthrene			<0.50	0.0393		0.169	0.149
2,6-Dimethylnaphalene			<0.50	< 0.03		<0.0>	<0.04			9-Мефујапитасеве			<0.50	< 0.03		0.323	0.0689
Bipbenyl			<0.50	<0.03		<0.0>	<0.04			у-ме ру) руст а лідасте			<0.50	< 0.03		0.221	0.0843
Sample Name	Range 24a	Insects	42818-251 TII-808	42818-253 TII-809	Bats	42818-291 TM1-1-808	42818-292 TM1-2-809			Sample Name	Range 24a	Insects	42818-251 TII-808	42818-253 TII-809	Bats	42818-291 TM1-1-808	42818-292 TM1-2-809

		5	2	5	5	_	5	5	2	5	5	5	œ	5	5	2	2	35	_	گ
Аласепе		< 0.05	<0.05	<0.05	< 0.05	0.0871	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	0.0898	< 0.05	<0.05	< 0.05	< 0.05	<0.05	0.0771	<0.05
" реп и присме		<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.0\$	<0.05
1-МетууШиотепе		<0.05	<0.05	<0.05	<0.05	0.0764	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.073\$	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4°-Dimethylbiphenyl		< 0.05	<0.05	< 0.05	<0.05	<0.0\$	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05
Пиотепе		< 0.05	< 0.05	< 0.05	0.0541	<0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05
Hexadecane		<0.05	<0.05	<0.05	<0.05	0.341	<0.05	<0.05	0.367	<0.05	< 0.05	<0.05	0.274	0.127	<0.05	0.227	0.780	<0.05	0.155	<0.05
2,3,5-Trimethylnaphalene		< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05
3.2-Dimethylnaphalene		< 0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dimethylnaphalene		<0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05
2,6-Dimethylnaphalene		<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05
Biphenyl		<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sample Name	Range 56	42818-052 SU2-1-816	42818-030 SM2-1-816	42818-008 SB2-1-816	42818-053 SU2-2-816	42818-031 SM2-2-816	42818-009 SB2-2-816	42818-053 SU2-3-816	42818-032 SM2-3-816	42818-010 SB2-3-816	42818-055 SU2-4-816	42818-056 SU2-4d-816	42818-033 SM2-4-816	42818-011 SB2-4-816	42818-057 SU2-5-816	42818-034 SM2-5-816	42818-012 SB2-5-816	42818-058 SU2-6-816	42818-035 SM2-6-816	42818-014 SB2-6-816

5

Hexachloroethane		<0.05	0.446	<0.05	<0.05	0.370	<0.05	0.184	0.286	<0.05	<0.05	0.0966	0.772	< 0.05	0.170	0.0713	<0.05	0.0926	1.798	<0.05
ənəəsərtinsiyhəmid-01,9		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-Ethylanthracene		<0.05	<0.05	0.0558	0.134	0.0614	0.0552	0.0515	0.0542	0.0544	0.0559	0.0537	<0.05	<0.05	0.0542	<0.05	0.0650	<0.05	0.0707	<0.05
3,6-Dimethylphenanturene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05
9-Метуузант жеепе		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	. <0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
у-Метууркталитепе		<0.05	<0.05	<0.05	<0.05	0.0655	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0870	<0.05	<0.05	<0.05	<0.05	<0.05	0.0620	<0.05
Name	. 56	42818-052 SU2-1-816	42818-030 SM2-1-816	42818-008 SB2-1-816	42818-053 SU2-2-816	42818-031 SM2-2-816	42818-009 SB2-2-816	42818-053 SU2-3-816	42818-032 SM2-3-816	42818-010 SB2-3-816	42818-055 SU2-4-816	42818-056 SU2-4d-816	42818-033 SM2-4-816	42818-011 SB2-4-816	42818-057 SU2-5-816	42818-034 SM2-5-816	42818-012 SB2-5-816	42818-058 SU2-6-816	42818-035 SM2-6-816	42818-014 SB2-6-816
Sample Name	Range 56	42818-0	42818-0	12818-0	42818-0	42818-(42818-0	42818-	42818-0	42818-0	42818-	42818-(42818-	42818-	42818-(42818-	42818-	42818-(42818-	42818-

ansianiqualiyinasing-2,1	1,3-Dimethylnaphalene		ansiadqanlydiamid-8,2
0	1.0	<1.0 <1.0	
0	1.0	<1.0 <1.0	
0	1.0	<1.0 <1.0	
0	1.0		
0	0.1		
0	1.0		
0	1.0	<1.0 <1.0	
00.0	1.0		
0	1.0	<1.0 <1.0	
0.00	0.1		<1.0 <1.0 <1.0

Hexachlorocthane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
9,10-Dimethylantnacene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
у-Ейлуі <u>ғалілт</u> ясепе		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
3,6-Dimethylphenanthrene		<1.0	<1.0	0.1>	0.1>	0.1>	<1.0	<1.0	<1.0	<1.0	<1.0
9-Мейруіапійтасеп е		<1.0	<1.0	<1.0	0	<1.0	<1.0	<1.0	0	<1.0	0
2-Мефуірһепапінепе		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
a me	56	42818-204 SW2-1-815	42818-205 SW2-1d-815	42818-206 SW2-2-815	42818-207 SW2-3-815	42818-208 SW2-4-815	42818-209 SW2-5-815	42818-210 SW2-6-815	42818-212 SW2-7-815	42818-213 SW2-8-815	42818-214 SW2-9-815
Sample Name	Range 56	42818-20-	42818-20	42818-20x	42818-20	42818-20	42818-20	42818-210	42818-21:	42818-21	42818-21

	Ī							<u> </u>			
Anthracene		<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05
Рћепапфгепе		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
і-Мейуі іі погепе		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	0.0639	<0.05
4,4'-Dimethylbiphenyl		<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05
ansouFi		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Нехадесале		<0.05	<0.05	<0.05	<0.05	<0.05	0.377	<0.05	<0.05	0.673	<0.05
2,3,3-7-Trimethylnaphalene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05
ənəladqaniyinəmid-C, I		< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05
anələdqəniyinəmid-E, İ		< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0>	<0.05	<0.05	<0.0>
2,6-Dimethylnaphalene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.0>
Biphenyl		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
		-1-815	-14-815	-2-815	-3-815	4-815	-5-815	-6-815	-7-815	-8-815	-9-815
Sample Name	Range 56	42818-088 SD2-1-815	42818-089 SD2-14-815	42818-090 SD2-2-815	42818-091 SD2-3-815	42818-092 SD2-4-815	42818-093 SD2-5-815	42818-094 SD2-6-815	42818-095 SD2-7-815	42818-096 SD2-8-815	42818-097 SD2-9-815

	I	1			T			1		_	
Hexachlorochane		0.0603	0.183	<0.05	0.190	0.490	<0.05	0.455	0.200	0.259	<0.05
9,10-Dimethylanthacene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05
2-Ейлуівпійлясепе		0.109	0.118	0.0680	0.0972	0.184	0.231	0.143	0.112	0.147	0.137
ənəndinsandqlydiəmid-2,8		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05
9-Меіһуіяпіһтасепе		<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05
2-Меthylphenanthrene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sample Name	Range 56	42818-088 SD2-1-815	42818-089 SD2-1d-815	42818-090 SD2-2-815	42818-091 SD2-3-815	42818-092 SD2-4-815	42818-093 SD2-5-815	42818-094 SD2-6-815	42818-095 SD2-7-815	42818-096 SD2-8-815	42818-097 SD2-9-815

Апіляселе		<0.05	0.243	0.0434					
		V	•	6					
हेप्रसम्बद्धाः हेप्रसम्बद्धाः		0.142	0.910	0.101					
i-Methylfluorene		0.109	0.579	0.0915					
4,4°-Dimethylbiphenyl		0.0983	0.212	0.0530					
ansnou∏		0.0985	0.280	0.148					
Нехадесапе		691.0	0.304	<0.04	Hexachloroethane		<0.05	<0.05	<0.04
ənəladqaniydıəmirT-2,£,2,		0.0833	0.292	<0.04	9,10-Dimethylanhmecene		0.149	0.122	0.0833
ənəladqaniydıəmi@-S, f		<0.05	<0.05	<0.04	2-Ethylanthracene		0.359	4.493	0.175
ənəladqanlydıəmid-£, l		8.408	0.326	0.0655	ənəndınsınədqiydiəmidi-0,8		0.189	0.300	0.0984
3,6-Dimethyinaphalene		0.0654	0.0817	<0.04	9-Мейлувапілгасепе		0.154	<0.05	0.171
Biphenyl		<0.05	0.0833	<0.04	2-Меthylphenanthrene		0.207	2.174	0.138
Sample Name	Range 56	42818-267 TV2-1-815	42818-268 TV2-2-815	42818-269 TV2-3-815	Sample Name	Range 56	42818-267 TV2-1-815	42818-268 TV2-2-815	42818-269 TV2-3-815

Sample Name	Biphenyl	anəladqaniyinəmid-6,2	anəladqaniyhəmid-£, l	ənəisdqsalyhəmid-S, I	ənəladqaniydıəmirT-2,6,2	Hexadecane	en en e	lynənqidlydəmi(I-'4,4	-Меthylfluorene	yenanthrene	ліһтасепе
Range 56						I	1	b	ī	ď	V
Insects											
42818-259 TI2-812	<0.05	< 0.05	0.0557	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	\$0.0X
42818-260 T12-813	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0566	<0.05	<0.05	0.0648	0.0695
Bats											
42818-299 TM2-1-812	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.0864	<0.04	0.0665	0.117	0.0592
42818-300 TM2-11-812	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0653	<0.05
42818-301 TM2-2-812	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.115	<0.10	<0.10	0.131	<0.10
42818-303 TM2-3-812	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.131	<0.10	0.248	0.471	0.127
42818-304 TM2-4-812	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.169	<0.10	0.241	0.439	0.136
42818-305 TM2-5-812	<0.07	<0.07	<0.07	<0.07	<0.07	<0.0>	0.0850	<0.0>	<0.07	0.0931	0.0742
42818-307 TM2-1-813	<0.10	<0.10	<0.10	<0.10	<0.10	0.116	0.263	0.162	0.317	0.519	0.159
42818-312 TM2-G-812	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
42818-313 TM2-G-813	<17.0	<17.0	<17.0	<17.0	<17.0	<17.0	18.893	<17.0	17.309	<17.0	<17.0
42818-314 TM2-6-812	<0.05	<0.05	<0.05	<0.05	<0.05	0.0509	0.112	<0.05	0.122	0.203	0.0707
risn											
42818-278 TF2-1a-815	<0.05	<0.05	<0.05	<0.0\$	<0.05	<0.05	0.317	<0.05	0.0644	0.129	0.0651
42818-279 TF2-1b-815	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0770	<0.0\$	0.0580	0.119	0.0568
42818-280 TF2-2-815	<0.05	<0.05	<0.05	<0.05	<0.05	0.0695	0.340	0.0987	0.261	0.433	0.1215
42818-281 TF2-3-815	<0.05	<0.0\$	<0.05	<0.05	<0.05	<0.05	0.283	<0.05	0.101	0.169	0.0853
42818-282 TF2-4-815	<0.05	<0.0\$	<0.05	<0.05	<0.05	<0.05	0.234	<0.05	<0.05	0.0885	<0.05
42818-283 TF2-5-815	<0.05	<0.05	<0.05	<0.05	<0.0\$	0.0621	0.333	0.0803	0.202	0.344	0.0952
42818-284 TF2-6-815	<0.05	<0.0\$	<0.0\$	<0.05	<0.05	<0.05	0.210	<0.05	<0.05	0.0775	<0.05

Sample Name	2-Methylphen anthrene	9-Мейуулапитасепе	3,6-Dimethylphenanthre	2-Ейууівпійгасеве	9,10-Dimethylanthracen	Hexachlorochane
Range 56						
Insects						
42818-259 TI2-812	<0.05	<0.05	<0.05	0.115	<0.05	<0.05
42818-260 TI2-813	0.0510	<0.05	0.0908	0.128	<0.0>	<0.05
Bats						
42818-299 TM2-1-812	0.135	0.121	0.124	0.285	<0.04	<0.04
42818-300 TM2-11-812	0.105	0.142	0.163	0.318	<0.05	<0.05
42818-301 TM2-2-812	0.189	0.122	0.249	0.489	0.252	<0.10
42818-303 TM2-3-812	0.275	0.764	0.239	1.150	<0.10	<0.10
42818-304 TM2-4-812	0.334	0.607	0.211	1.368	<0.10	<0.10
42818-305 TM2-5-812	0.148	0.270	0.135	0.294	<0.07	<0.07
42818-307 TM2-1-813	0.370	0.862	0.225	1.363	<0.10	<0.10
42818-312 TM2-G-812	0'9>	<6.0	6.444	12.616	<6.0	<6.0
42818-313 TM2-G-813	<17.0	21.983	<17.0	61.308	<17.0	<17.0
42818-314 TM2-6-812	0.168	0.340	0.116	0.627	<0.05	<0.0\$
Fish						
42818-278 TF2-1a-815	0.126	0.125	0.119	0.259	<0.05	<0.05
42818-279 TF2-1b-815	0.108	0.0554	0.139	0.295	0.142	<0.0\$
42818-280 TF2-2-815	0.275	0.403	0.190	0.981	<0.05	<0.05
42818-281 TF2-3-815	0.283	0.122	0.252	0.450	0.251	<0.05
42818-282 TF2-4-815	0.0731	0.0619	0.0534	0.199	<0.05	<0.05
42818-283 TF2-5-815	0.233	0.338	0.131	0.761	0.0720	<0.05
42818-284 TF2-6-815	0.0891	0.0565	0.0736	0.167	<0.05	<0.05

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,	Biphenyl	2,6-Dimethylnaphalene	3.3-Dimethylnaphalene	3,2-Dimethyhaphalene	2,5,5-Trimethyhnaphalene	Нехадесале	Fluorene	t,4'-Dimethylbiphenyl	-үүсгү үң југосис	ренчицилене	литвесте
Battle Drill									I	ď	٧
42818-059 SU3-1-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0\$	<0.05	<0.05	20.07	30 07
42818-036 SM3-1-816	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	\$0.0×	\$0.0V	20.07
42818-038 SM3-1d-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	\$0.05	20.07
42818-015 SB3-1-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	\$0.0	30.0
42818-060 SU3-2-816	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	\$0 0 V	800
42818-039 SM3-2-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	\$0.0×
42818-016 SB3-2-816	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.0\$	<0.05	<0.05	<0.05	<0.0>
42818-062 SU3-3-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.0>
42818-040 SM3-3-816	<0.05	<0.05	0.0670	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.0>
42818-017 SB3-3-816	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05
42818-063 SU3-4-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0>	<0.05	<0.05	<0.05	<0.05
42818-041 SM3-4-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
9-4-810	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0>	<0.05	<0.05	<0.05	<0.05
42818-019 SB3-46-816	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	0.0678	<0.05	0.0641
42818-064 SU3-5-816	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05
42818-042 SM3-5-816	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	80 00
42818-020 SB3-5-816	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	50.05	800
42818-065 SU3-6-816	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	>0.05	\$0.07	300
42818-043 SM3-6-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	\$0.0×	\$0.0	20.07
42818-021 SB3-6-816	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	\$0.05	0.0735	50.07	20.07

Sample Name	у-Мефуррения причене	9-Мету/Івпітлесте	3,6-Dimethylphenanthrene	2-Ethylanthracene	9,10-Dimethylanthracene	Hexachloroethane
Battle Drill						
42818-059 SU3-1-816	<0.05	<0.05	<0.05	0.0736	<0.05	<0.05
42818-036 SM3-1-816	<0.05	<0.05	<0.05	0.0443	<0.05	0.398
42818-038 SM3-14-816	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05
42818-015 SB3-1-816	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05
42818-060 SU3-2-816	<0.05	<0.05	<0.05	0.0843	< 0.05	0.197
42818-039 SM3-2-816	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05
42818-016 SB3-2-816	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05
42818-062 SU3-3-816	<0.05	<0.05	<0.05	0.0656	< 0.05	0.0954
42818-040 SM3-3-816	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
42818-017 SB3-3-816	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05
42818-063 SU3-4-816	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05
42818-041 SM3-4-816	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05
42818-018 SB3-4-816	<0.05	<0.05	<0.05	0.0521	<0.05	<0.05
42818-019 SB3-4d-816	<0.05	<0.05	<0.05	0.0500	< 0.05	< 0.05
42818-064 SU3-5-816	<0.05	<0.05	<0.05	0.0649	< 0.05	< 0.05
42818-042 SM3-5-816	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05
42818-020 SB3-5-816	<0.05	<0.05	<0.05	0.0510	< 0.05	< 0.05
42818-065 SU3-6-816	<0.05	<0.05	<0.05	<0.05	<0.05	0.460
42818-043 SM3-6-816	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05
42818-021 SB3-6-816	<0.05	<0.05	<0.05	0.0505	<0.05	<0.05

Anthracene	7	<1.0	<1.0	2.75	<1.0	<1.0							
Распанителе		<1.0	<1.0	1.23	<1.0	<1.0							
յ-Methyliluorene		0.1>	<1.0	1.25	<1.0	<1.0							
4,4'-Dimethylbiphenyl		<1.0	<1.0	<1.0	<1.0	<1.0							
Fluorene		2.14	4.08	9.43	2.66	3.70							
Нехадесале		<1.0	<1.0	<1.0	<1.0	<1.0	Нехасиюствате		<1.0	<1.0	<1.0	<1.0	<1.0
ənəlsdqsnlydəminT-2,5,2,2		<1.0	1.31	2.26	<1.0	1.32	9,10-Dimethylanthracene		<1.0	<1.0	<1.0	<1.0	<1.0
ansladganlythsmid-2,1		<1.0	<1.0	<1.0	<1.0	<1.0	2-Ейруівайнясепе		<1.0	<1.0	<1.0	<1.0	<1.0
3.3-Dimethylnaphalene		<1.0	<1.0	<1.0	<1.0	<1.0	3,6-Dimethylphenanthrene		<1.0	<1.0	<1.0	<1.0	<1.0
ənəladqaniydiəmid-6,2		<1.0	<1.0	<1.0	<1.0	<1.0	9-Мейууіалійгасепе		<1.0	<1.0	<1.0	<1.0	<1.0
Biphenyl		<1.0	<1.0	<1.0	<1.0	<1.0	2-Мейу/рћевалитеве		<1.0	<1.0	<1.0	<1.0	<1.0
Sample Name	Battle Drill	42818-215 SW3-1-816	42818-216 SW3-2-816	42818-217 SW3-3-816	42818-218 SW3-6-816	42818-219 SW3-8-816	Sample Name	Battle Drill	42818-215 SW3-1-816	42818-216 SW3-2-816	42818-217 SW3-3-816	42818-218 SW3-6-816	42818-219 SW3-8-816

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Anihracene		<0.0\$	<0.05	<0.05	<0.0\$	<0.0\$	<0.05	<0.05	<0.05
Phensnihrene		<0.0\$	0.060\$	0.0637	0.0847	<0.05	<0.05	<0.05	<0.05
I-Methylfluorene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-Dimethylbiphenyl		<0.05	<0.05	<0.05	<0.0\$	<0.05	<0.05	<0.05	<0.05
ensioul '		<0.05	<0.0\$	<0.05	<0.0\$	<0.05	<0.05	<0.05	<0.05
ЭпвээрвхэН		<0.05	0.237	<0.05	<0.05	<0.05	<0.05	<0.05	0.536
ənəlariqaniyinəmirT-2, £, 2		<0.0\$	<0.05	<0.0\$	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dimethylnaphalene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.0\$	<0.0\$	<0.05
1,3-Dimethylnaphalene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2,6-Dimethytaniqanlene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Biphenyl		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0\$
Sample Name	Battle Drill	42818-103 SD3-1-816	42818-104 SD3-2-816	47818-104 SD3-3-816	42818-106 SD3-4-816	47818-107 SD4-5-816	47818-108 SD1-6-816	47818-109 SD3-7-816	42818-110 SD3-8-816

Нехасһіогоейзапе		0.0845	<0.05	<0.05	<0.05	0.0985	0.112	0.247	0.137
9,10-Dimethylanthracene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-Ейруіапілгасепе		<0.05	<0.05	<0.05	0.163	<0.05	<0.05	<0.05	<0.05
3,6-Dimethylphenanthrene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
9-Мейујалфгасеве		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0\$	<0.05
Z-Methylphenantrene		<0.05	<0.05	<0.0\$	0.0784	<0.05	<0.05	<0.05	<0.05
		3-1-816	3-2-816	3-3-816	3-4-816	3-5-816	3-6-816	3-7-816	3-8-816
Sample Name	Battle Drill	42818-103 SD3-1-816	42818-104 SD3-2-816	42818-105 SD3-3-816	42818-106 SD3-4-816	42818-107 SD3-5-816	42818-108 SD3-6-816	42818-109 SD3-7-816	42818-110 SD3-8-816

		-	,							
ansosnúnA		0.0662	0.157	0.0607		·				
Рћевавићеће		<0.05	0.513	0.101						
1-Methyifluorene		0.0900	0.309	0.0870						
4,4°-Dimethylbiphenyl		<0.0\$	0.153	<0.0>						
Fluorene .		0.117	0.179	0.113						
Нехваесапе		0.0643	0.0526	<0.05		Hexachlorocthane		<0.05	<0.05	<0.05
ənəisiqsaliydəminT-2,£,2		<0.05	0.0667	<0.05		9,10-Dimethylanhracene		0.103	0.173	0.0530
anəladqanlythəmid-C, l		<0.05	0.0614	<0.05	•	2-Ейруівпійтасепе		0.233	0.888	0.202
ənəlariqaniytriəmi G-E, I		0.206	0.0919	<0.05		onanthasnahqlythamid-0,5		0.141	0.176	0.123
ənəladqaniythəmid-ö,2		<0.05	<0.0\$	<0.0\$		9-Methylanthracene		0.233	969.0	0.226
Bipbenyl		<0.05	<0.0\$	<0.05		2-Меthylphensnthrene		0.186	0.383	0.168
Sample Name	Battle Drill	42818-270 TV3-1-815	42818-271 TV3-2-815	42818-272 TV3-3-815		Sample Name	Battle Drill	42818-270 TV3-1-815	42818-271 TV3-2-815	42818-272 TV3-3-815

Sample Name	Biphenyl	2,6-Dimethylnaphalene	ənəlariqaniydəmiG-E, I	ənəladqanlydəmiG-2, i	anəladqaniyinəmirT-č,£,\$	Нехадесапе	Fluorene	4,4°-Dimethylbiphenyl	ј-Мефујвиогеве	Phenandrene	Anthracene
Battle Drill											,
Insects											
42818-255 TI3-810	<0.04	<0.04	0.040	×0.04	< 0.04	<0.04	×0.05	×0.04	×0.04	7 0.0×	V0 04
42818-257 TL3-811	<0.06	0.0659	< 0.06	> 0.06	<0.06	<0.06	<0.06	>0.06	S	8000	0 0601
Bats										20.07	10000
42818-297 TM3-6-811	<0.08	<0.08	<0.08	<0.08	<0.08	0.0983	0.152	0.113	0.267	0.480	0.141
42818-293 TM3-1-809	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.105	<0.10	<0.10	0.156	<0.10
42818-294 TM3-2-810	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.132	<0.10	<0.10	0.156	<0.10
Fish											
42818-285 TF3-1-815	<0.05	<0.05	<0.05	<0.0\$	<0.05	<0.05	0.172	<0.05	<0.05	0.0539	0.0569
42818-286 TF3-2-815	<0.05	<0.0\$	<0.05	<0.05	0.0635	0.0761	0.348	0.0898	0.193	0.316	0.100
42818-287 TF3-3-815	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.113	<0.05	<0.05	<0.05	<0.05
42818-288 TF3-4-815	<0.05	<0.05	<0.05	<0.05	<0.05	0.0710	0.361	0.0949	0.196	0.321	0.0737
42818-289 TF3-5-815	<0.05	<0.0\$	<0.05	<0.05	<0.05	<0.05	0.229	<0.05	<0.05	<0.05	<0.05

Sample Name	2-Мейлуірһспапійпеве	9-Мейлуіяпійгасепе	3,6-Dimethylphenanthrene	2-Ethylanthracene	9,10-Dimethylanthracene	Нехасріогосілале
Battle Drill						
Insects						
42818-255 TI3-810	0.0679	< 0.04	<0.04	0.110	<0.04	< 0.04
42818-257 TI3-811	>0.06	>0.06	<0.06	0.150	>0.06	<0.06
Bats						
42818-297 TM3-6-811	0.283	0.732	0.209	0.818	0.0844	<0.08
42818-293 TM3-1-809	0.247	0.238	0.326	0.551	<0.10	<0.10
42818-294 TM3-2-810	0.207	0.225	0.184	0.514	<0.10	<0.10
Fish						
42818-285 TF3-1-815	0.0578	<0.0\$	<0.0\$	0.119	<0.05	<0.05
42818-286 TF3-2-815	0.181	0.313	0.119	0.669	<0.0\$	<0.05
42818-287 TF3-3-815	0.0664	0.0612	0.0607	0.141	<0.0\$	<0.0\$
42818-288 TF3-4-815	0.213	0.301	0.132	0.682	0.0513	<0.05
42818-289 TF3-5-815	0.0559	0.0659	<0.05	0.185	<0.0\$	<0.03

Sample Name	Biphenyl	2,6-Dimethylmaphalene	1,3-Dimethylnaphalene	1,2-Dimethylnaphalene	ərəlarlqanlythərmir T-2,5,5,	exadecane	Juorene	fynaddidiydamid-'+,	-МефуіЛиоспе	регичидилене
Reference - Choccolocco						I	1	Þ	Ţ	d
42818-080 SU4-1-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	09900	9007
42818-074 SM4-1-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0>
42818-066 SB4-1-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	0.0526
42818-081 SU4-2-817	<0.05	<0.05	<0.05	<0.05	<0.05	0.315	< 0.05	<0.05	0.0756	<0.05
42818-075 SM4-2-817	<0.05	<0.05	0.166	<0.0\$	<0.05	0.0853	< 0.05	<0.05	0.0517	<0.05
42818-067 SB4-2-817	<0.05	<0.05	0.0641	<0.05	<0.05	<0.05	<0.05	<0.05	0.0522	<0.05
42818-068 SB4-2d-817	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
42818-082 SU4-3-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0575	<0.05
42818-076 SM4-3-817	<0.05	<0.05	<0.05	<0.05	<0.0>	< 0.05	<0.05	<0.05	0.0517	<0.05
42818-069 SB4-3-817	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05
42818-083 SU4-4-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05
42818-077 SM4-4-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0704	<0.05
42818-070 SB4-4-817	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05
42818-084 SU4-5-817	<0.05	<0.05	<0.05	< 0.05	<0.05	0.479	< 0.05	< 0.05	< 0.05	<0.05
42818-078 SM4-5-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0827	<0.05
42818-071 SB4-5-817	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	\$0.05
42818-086 SU4-6-817	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	0.0529	0.0526
42818-087 SU4-6d-817	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	>0.05	\$0.02
42818-079 SM4-6-817	<0.05	<0.05	<0.05	<0.05	<0.05	0.225	<0.05	<0.05	0.0912	0 104
42818-072 SB4-6-817	<0.05	<0.05	<0.05	<0.05	<0.05	1.307	<0.05	20.05	20.02	2007
							7	33.51	52:5/	70.07

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Sample Name	Апітьсеве	у-Мейууржалагы	9-Метрујапвивсепе	nnensdqlyrhəmiG-2,E	2-Ethylandnacene	sutmelythəmid-01,6	Hexachlorocthane	
Reference - Choccolocco								
42818-080 SU4-1-817	<0.05	<0.05	<0.05	<0.05	0.227	0.105	0.228	
42818-074 SM4-1-817	<0.05	<0.05	<0.05	<0.05	0.0546	<0.05	0.0787	
42818-066 SB4-1-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
42818-081 SU4-2-817	<0.05	<0.05	0.0514	<0.05	0.440	0.0764	0.238	
42818-075 SM4-2-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.187	
42818-067 SB4-2-817	<0.05	<0.05	<0.05	< 0.05	0.209	<0.05	0.101	
42818-068 SB4-2d-817	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	0.296	
42818-082 SU4-3-817	<0.05	<0.05	<0.05	<0.05	0.276	0.0542	0.132	
42818-076 SM4-3-817	<0.05	<0.05	<0.05	<0.05	0.0560	<0.05	0.195	
42818-069 SB4-3-817	<0.05	<0.05	<0.05	<0.05	0.217	<0.05	<0.05	
42818-083 SU4-4-817	<0.05	<0.05	< 0.05	<0.05	0.227	<0.05	0.209	
42818-077 SM4-4-817	<0.05	< 0.05	< 0.05	<0.05	0.0750	<0.0\$	0.302	
42818-070 SB4-4-817	<0.05	<0.05	<0.05	<0.05	0.145	<0.05	0.0693	
42818-084 SU4-5-817	<0.05	<0.05	<0.05	0.0502	0.230	<0.05	0.123	
42818-078 SM4-5-817	<0.05	0.0756	0.0530	<0.05	0.131	<0.05	0.430	
42818-071 SB4-5-817	<0.05	< 0.05	< 0.05	<0.05	0.148	<0.05	<0.05	
42818-086 SU4-6-817	<0.05	0.0647	< 0.05	<0.0\$	<0.05	<0.05	0.199	
42818-087 SU4-6d-817	<0.05	< 0.05	<0.05	<0.05	0.0902	< 0.05	0.0656	
42818-079 SM4-6-817	<0.05	<0.05	<0.05	<0.05	0.221	<0.05	0.171	
42818-072 SB4-6-817	<0.05	<0.05	<0.05	<0.05	0.138	<0.05	<0.05	

Sample Name	Biphenyl	2,6-Dimethylnaphalene	1,3-Dimethylnaphalene	ənəladqaniydıəmid-2,1	anələdqəniyinədirT-2,5,2,2	Нехадесапе	Fluorene	4,4'-Dimethylbiphenyl	ј-Ме фуіffиоге ве	Phenanthrene
Kererence - Choccolocco										I
42818-220 SW4-1-817	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	012	017	2.7
42818-221 SW4-2-817	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ò	017	2.7	0.1
42818-223 SW4-3-817	<1.0	<1.0	<1.0	<1.0	0	o	ò	917	27	2 2
42818-224 SW4-4-817	<1.0	<1.0	<1.0	<1.0	0	<10	900	9:17		
42818-225 SW4-5-817	<1.0	<1.0	<1.0	<1.0 <1.0	012	017	800	9:1	0.17	0.12
42818-226 SW4-6-817	<1.0	<1.0	<1.0	01>		2	5	0.17	0.17	0.15
42818-227 SW4-7-817	<1.0	<1.0	<1.0	0.1	ò		3.	0.17	0 ;	0.15
42818-228 SW4-7d-817	<1.0	<1.0	<1.0	<1.0	0	0	0	2.17	0.1	0.1
42818-229 SW4-8-817	<1.0	<1.0	<1.0	<1.0	0			9:1	0.17	0.1.5
42818-230 SW4-9-817	<1.0	<1.0	<1.0	<1.0	0	V - V	0	2 7	0.17	0.10
42818-231 SW4-10-817	<1.0	<1.0	<1.0	<1.0	c	917		2:1	0.17	0.17
					,	0.17		V.1.>	0.1.	0.1.

CCO CO CO CO CO CO CO CO					સ			
ccolocco <1.0	Sample Name	ə nəə s ıdınA	у-Мешу/расперителе	9-Мейу)вайласеве	1-0-Dimethylphenanthre	2-Ейууівайласеве	9,10-Dimethylanthracene	Hexachloroethane
<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0	Reference - Choccolocco							
61.0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0 0 <1.0 <1.0 <1.0	42818-220 SW4-1-817	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
0	42818-221 SW4-2-817	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	42818-223 SW4-3-817	0	<1.0	0	<1.0	0	<1.0	<1.0
0	42818-224 SW4-4-817	0	<1.0	0	<1.0	<1.0	<1.0	<1.0
0	42818-225 SW4-5-817	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
0	42818-226 SW4-6-817	0	<1.0	0	<1.0	0	<1.0	<1.0
0.00 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	42818-227 SW4-7-817	0	<1.0	0	<1.0	0	<1.0	<1.0
0.00 <1.0 <1.0 <1.0	42818-228 SW4-7d-817	0.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
0.00 <1.0 <1.0	42818-229 SW4-8-817	0	<1.0	<1.0	<1.0	0.00	<1.0	<1.0
01/	42818-230 SW4-9-817	0.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
0.17	42818-231 SW4-10-817	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Sample Name	ВірћевуІ	2,6-Dimethylnaphalene	ənəladqaniydıəmid-E, l	1,2-Dimethylnaphalene	ənəlsaqəmiyinəmirT-č,£,2,	Нехадесапе	Fluorene	4,4°-Dimethylbiphenyl	у- Мейууій иоге пе	урсивирисие
Reference - Choccolocco								,		I
42818-114 SD4-1-817	<0.05	<0.05	<0.05	<0.05	<0.05	0.345	<0.05	<0 0\$	>0.05	3000
42818-115 SD4-2-817	<0.05	<0.05	<0.05	<0.05	<0.05	0.454	>0.05	2002	00.0	0.0
42818-116 SD4-3-817	<0.05	<0.05	<0.05	<0.05	\$0.0\$	9920	50.05	50.0	50.0	C0.02
42818-117 SD4-4-817	<0.05	<0.0>	<0.05	3000	3000	267.0	60.0	00.0	CO:02	<0.05
42818-118 SD4-5-817	>0.05	3000	50.0	20.0	60.0	0.420	<0.05	<0.05	<0.05	<0.0\$
47010 110 004 4 017	20.0	60.0	20.05	C0.05	<0.05	0.247	<0.0\$	<0.0\$	<0.05	<0.0\$
47010-117 3174-0-017	<0.03	<0.05	<0.0\$	<0.05	<0.05	0.255	<0.05	<0.05	<0.05	<0.05
42818-120 SD4-7-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0\$	<0.05	<0.05	\$0.05	\$0.07
42818-121 SD4-7d-817	<0.05	<0.05	<0.05	<0.05	<0.05	0.208	<0.05	\$0.0	60.0	60.07
42818-122 SD4-8-817	<0.05	<0.05	<0.05	<0.05	<0.05	>0.05	\$0.05	50.0	60.0	20.05
42818-123 SD4-9-817	<0.03	<0.05	<0.05	<0.05	<0.05	<0.0>	<0.05	50.05	0.07	<0.05
42818-124 SD4-10-817	<0.05	<0.05	<0.05	<0.05	\$0.05	\$0.07	20.07	600	0.0761	CO.0>
				20.5	00.0	20.07	50.0	<0.0>	3	> 000>

	əu	ррепяпітепе	anthracene	արչ լերությունու շ	яриясене	егруі <u>впі</u> ртасепе	ocethane
Sample Name	Апфиясе	у-Мешу	9-Мефуі	smiG-0,£	2-Ethylar	9,10-Dia	Цехвсијо
Reference - Choccolocco							
42818-114 SD4-1-817	<0.05	<0.05	<0.05	<0.05	0.0586	<0.05	0.421
42818-115 SD4-2-817	<0.05	<0.05	<0.05	<0.05	0.0707	<0.0\$	0.374
42818-116 SD4-3-817	<0.05	<0.05	<0.0\$	<0.05	0.0669	<0.0\$	<0.0\$
42818-117 SD4-4-817	<0.05	<0.05	<0.05	<0.05	0.147	<0.05	0.0732
42818-118 SD4-5-817	<0.05	<0.05	<0.05	<0.05	0.108	<0.0\$	<0.05
42818-119 SD4-6-817	<0.05	<0.05	<0.05	<0.05	0.105	<0.0\$	0.164
42818-120 SD4-7-817	<0.0\$	<0.05	<0.05	<0.05	<0.0>	<0.0\$	<0.05
42818-121 SD4-7d-817	<0.05	<0.05	<0.0\$	<0.05	<0.0\$	<0.05	<0.05
42818-122 SD4-8-817	<0.05	0.0668	<0.0\$	<0.05	0.0790	<0.05	<0.05
42818-123 SD4-9-817	0.0608	0.0524	<0.05	<0.05	0.0586	<0.05	<0.05
42818-124 SD4-10-817	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0\$	0.0815
							1

0.00 0.14 0.011 0.224 0.0039 0.186 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.187 0.0039 0.003												Г
CCOLOCCO Color C	ple Name	Вірћепуl	2,6-Dimethylnaphalene	1,3-Dimethylnaphalene	J.S-Dimethylnaphalene	sasisadqaniyinəmirT-2,5,5,5	ənsəəbsxəf	inorene .	,4'-Dimethylbiphenyl	-Мейууі Пиогепе	อนานที่เกลกอน	
0.133 <0.05 0.149 <0.05 0.0526 0.0526 <0.05 0.0706	ference - Choccolocco							I	Þ	I	đ	-
Cours Cour	18-273 SV4-1-817	0.133	<0.05	0.149	<0.05	<0.05	0.0735	0.183	0.0734	0 10	0 0666	1
Co.05 Co.05 Co.05 Co.05 Co.05 Co.05 Co.05	8-274 SV4-2-817	<0.05	<0.0\$	0.0526	<0.05	<0.05	0.0683	0.0706	<0.05	0 0963	0.130	_
OCCOIOCCO Anthracene Anthracene 2-Methylphenanthracene Anthracene 3,6-Dimethylphenanthracene Anthracene 3-Ethylanthracene Anthracene 3-Lethylanthracene Anthracene 3-Lo-Dimethylphenanthracene Anthracene 3-Lo-Dimethylanthracene Anthracene	8-275 SV4-3-817	<0.05	<0.05	0.0525	0.0656	<0.05	0.0671	0.183	0.0862	0.150	0.226	-
Occolocco												Т.
OCCOIOCCO CO.05 0.149 0.144 0.111 0.224 0.0739 <0.05 0.173 0.177 0.173 0.306 0.139 0.128 0.278 0.401 0.186 0.356 0.114	ole Name	Апілгасеве	2-Мейу/рћењайћеве	9-Мейу)апілтасепе	ənəndınanədqiydəmid-0,5	2-Ейууалинасепе	enesenthmelythemid-01,9	Hexachloroethane				T
<0.05 0.149 0.144 0.111 0.224 0.0739 <0.05	erence - Choccolocco											7
<0.05 0.173 0.177 0.173 0.139 0.128 0.278 0.401 0.186 0.356 0.114	8-273 SV4-1-817	<0.0\$	0.149	0.144	0.111	0.224	0.0739	<0.05				<u> </u>
0.128 0.278 0.401 0.186 0.356 0.114	8-274 SV4-2-817	<0.05	0.173	0.177	0.173	0.306	0.139	<0.05				-
2000	8-275 SV4-3-817	0.128	0.278	0.401	0.186	0.356	0.114	<0.05				

		эцэгр	рряјеве	ənəlado	парћајеве			bpenyl	a	
Sample Name	Biphenyl	2,6-Dimethylna	lanlyhamid-£, l	Jenlythəmid-2,1	մա տու դ-Հ, £,Հ	Нехадесале	ansoul	4,4'-Dimethylbi	i -Methylfluoren	Phenanthrene
Reference - Choccolocco										
Insects										
42818-252 TI4-808	<0.10	<0.10	<0.10	<0.10	<0.10	0.107	<0.10	<0.10	<0.10	0.102
42818-254 TI4-809	<0.10	<0.10	<0.10	<0.10	<0.10	0.103	<0.10	<0.10	<0.10	0.102
42818-256 TI4-810	<0.04	<0.04	<0.04	<0.04	<0.04	< 0.04	< 0.04	<0.04	<0.04	<0.04
42818-258 TI4-811	<0.06	>0.06	<0.06	< 0.06	>0.06	<0.06	0.0636	>0.06	<0.06	<0.06
42818-261 TI4-812	<0.05	< 0.05	0.0632	<0.05	<0.05	<0.05	0.0536	<0.05	<0.05	0.0753
42818-262 T14-813	<0.07	< 0.07	<0.07	<0.07	<0.07	< 0.07	<0.07	<0.07	<0.07	<0.07
Bats										
42818-306 TM4-1-812	<0.05	<0.0\$	<0.0\$	<0.0\$	<0.0\$	<0.0\$	0.0684	<0.05	0.0798	0.126
42818-308 TM4-1-813	<0.06	<0.06	<0.06	<0.06	>0.06	<0.06	<0.06	<0.06	<0.06	0.0731
42818-309 TM4-2-813	<0.06	<0.06	<0.06	<0.06	>0.06	<0.06	<0.06	<0.06	0.0773	0.142
42818-310 TM4-3-813	<0.05	<0.0\$	<0.05	<0.05	<0.05	<0.05	0.0552	<0.05	<0.0\$	<0.03
42818-311 TM4-G2-808	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
42818-295 TM4-1-809	<0.05	<0.05	<0.05	<0.0\$	<0.05	<0.05	0.0893	<0.05	<0.05	0.0534
42818-296 TM4-1-810	<0.03	<0.03	0.0361	<0.03	<0.03	<0.03	0.0488	0.0259	0.0573	0.174
42818-298 TM4-1-811	<0.08	<0.08	<0.08	<0.08	<0.08	0.134	0.241	<0.08	0.428	0.801
Fish										
42818-277 TF4-1-814	<0.05	<0.0\$	<0.05	<0.05	<0.05	<0.05	0.143	<0.05	0.106	0.133

Sample Name	enesethinA	у-Мейуурдагандага	9-Methylanthracene	3,6-Dimethylphenanhrene	2-Ethylasnthracene	9,10-Dimethylanthracene	Hexachloroethane
Reference - Choccolocco							
Insects							
42818-252 TI4-808	<0.10	<0.10	0.116	<0.10	0.307	<0.10	<0.10
42818-254 T14-809	0.115	<0.10	<0.10	<0.10	0.292	<0.10	<0.10
42818-256 T14-810	×0.04	<0.04	< 0.04	<0.04	0.0813	0.0417	×0.0×
42818-258 T14-811	<0.06	<0.06	>0.06	<0.06	0.164	>0.06	<0.06
42818-261 T14-812	0.0767	0.0798	<0.05	<0.05	0.0893	<0.05	<0.05
42818-262 T14-813	<0.07	<0.07	<0.07	<0.07	0.160	<0.07	<0.07
Bats							
42818-306 TM4-1-812	0.0549	0.186	0.224	0.232	0.497	0.326	<0.0\$
42818-308 TM4-1-813	<0.05	0.10\$	0.0924	0.130	0.284	0.170	<0.06
42818-309 TM4-2-813	<0.06	0.114	0.262	0.0826	0.313	>0.06	<0.06
42818-310 TM4-3-813	0.0509	0.0661	0.116	0.0646	0.152	<0.05	<0.0\$
42818-311 TM4-G2-808	<10.0	15.424	17.517	18.722	35.409	<10.0	<10.0
42818-295 TM4-1-809	<0.0\$	0.0578	0.0809	<0.0\$	0.125	<0.05	<0.05
42818-296 TM4-1-810	0.0564	0.0900	0.190	0.0862	0.448	0.0604	<0.03
42818-298 TM4-1-811	0.196	0.503	1.163	0.336	2.172	0.118	<0.08
Fish							
42818-277 TF4-1-814	0.0520	0.156	0.180	0.113	0.356	<0.05	<0.05

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PLEASE CALL THE NUMBERS LISTED ABOVE FOR COMMENTS, QUESTIONS, AND QUOTATIONS. THANK YOU FOR YOUR CONTINUED PATRONAGE.

The following shows the quantifying and qualifying ion(s) for each analyte:

Analyte	Quantifying ion	Qualifying ion(s)	
Biphenyl	154.1	76.0	
2,6-Dimethylnaphthalene	156.1	141.1	
1,3-Dimethylnaphthalene	141.1	156.1	
1,2-Dimethylnaphthalene	141.1	156.1	
2,3,5-Trimethylnaphthalene	170.1	155.1	
Hexadecane	71.0	85.0	226.1
Fluorene	166.1	165.1	
4,4'-Dimethylbiphenyl	182.1	167.1	
1-Methylfluorene	165.1	180.1	
Phenanthrene	178.1	152.1	
Anthracene	178.1	152.1	
2-Methylphenanthrene	192.1	165.1	
9-Methylanthracene	192.1	165.1	
3,6-Dimethylphenanthrene	206.1	191.1	
2-Ethylanthracene	206.1	191.1	
9,10-Dimethylanthracene	206.1	191.1	
Hexachloroethane	201.0	166.1	

Table I. Summary Table of Results for Soll and Sediment.

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Hexechloroethese	-	ž	0.00	39.6	ľ	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	 ×	0.0148	%	<0.05	<0.05	<0.05
9,10-Dimethylanthraceae	0	0.0273	٧	27.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.479	ž	47.9	< 0.05	< 0.05	< 0.05
у-Едуу імадулассав	0.0853	991'0	VN	7.87	0.0816	0.0721	0.0614	0.0666	0.0533	0.0558	0.0552	0.0544	< 0.05	0.0650	0.803	¥	80.3	< 0.05	< 0.05	< 0.05
3.6-Dienethylphenenthrene	0.0135	0.118	NA	105	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	0.828	¥	82.8	< 0.05	<0.05	< 0.05
9-Methylanthreene	0	0.0791	NA	79.1	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.03	< 0.05	0.707	ž	70.7	< 0.05	< 0.05	< 0.05
2-Methylphennothens	0	0.125	NA	125	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.08	<0.05	<0.05	0.802	Ş	80.2	< 0.03	<0.05	< 0.03
secondia A	0	0.0909	٧×	90.9	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	0.703	¥	70.3	< 0.05	< 0.05	< 0.05
en de contract d'	0.0130	0.0936	¥	80.6	< 0.05	< 0.05	< 0.05	< 0.05	<0.08	<0.05	<0.05	< 0.05	<0.05	<0.05	622.0	ž	72.9	<0.05	< 0.05	<0.05
1-Methyllhuorene	0.0175	9060.0	ž	73.1	<0.05	<0.05	0.0748	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	107.0	¥	20.1	<0.05	< 0.05	< 0.05
4,4°-Dimethylbiphenyl	0.00721	0.0768	ž	9.69	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.650	X,	65.0	< 0.05	< 0.05	<0.05
Fluorese	0	0.0976	ž	9.76	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	0.665	¥	86.5	< 0.05	< 0.05	<0.05
Нехифесине	0	0.0610	ž	61.0	0.631	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	0.177	0.780	0.651	ž	65.1	<0.05	<0.05	<0.05
3.5.5.Trimethylmaphalene	0	0.0596	ž	59.6	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.06	0.557	٧×	55.7	<0.05	<0.05	<0.05
1,2-Dimethylnaphalene	0.0139	0.0516	¥	37.7	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	0.436	ş	43.6	<0.05	<0.05	<0.05
sasledqualydsanid-E, I	٥	0.0334	¥	33.4	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	0.389	ž	38.9	< 0.05	< 0.05	< 0.05
2,6-Dimethy Imaphalens	0	0.0370	¥	37.0	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	0.408	Ş	40.6	<0.05	< 0.05	< 0.05
Biphenyl	0	0.0419	¥	41.9	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.520	ž	52.0	< 0.05	<0.05	< 0.05
Sample Name	42818-001 CONTROL	42818-002 C + 0.10 PPM	42818-002 C + 0.010 PPM		42818-003 SB1-2-816	42818-004 SBI-3-816	42818-005 SB1-4-816	42818-006 SB1-5-816	42818-007 SB1-6-816	42818-008 SB2-1-816	42818-009 SB2-2-816	42818-010 SB2-3-816	42818-011 SB2-4-816	42818-012 SB2-5-816	42818-013 C + 1.00 PPM	42818-013 C + 0.050 PPM		42818-014 SB2-6-816	42818-015 SB3-1-816	42818-016 SB3-2-816

Sample Nane	Biphenyl	2,6-Dimethylnephalene	omolandqani ydoomid - E, I	1,2-Dimethylosphalene	2,5,5-Trimethy hasphalene	amecontain)	Phorese	4,4'-Dimethylbiphenyl	i-Methyilluorens	Photosophysic	упария севе	у-Мейдурьськай темв	- Мейу Івифиясеве	sasrahanandq yabsaniG-0,	-Pitty isothracess	0.10-Dimethylandraceae	exachlorocthase
42818-017 SB3-3-816	< 0.05	×0.08	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	×0.05	2 00	6 5	٤ ج	2 5	6	н
42818-018 SB3-4-816	<0.05	×0.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	×0.05	×0.05	A0 0	8	8 6	3 3	S	9	V 0.03
42818-019 SB3-44-816	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	8790.0	<0.0×	0.0641	8 0	8 6	8 6	0.0021	800	× 0.05
42818-020 SB3-5-816	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	×0.05	200	2	3 5	9000	9 3	S) 3
42818-021 SB3-6-816	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.0>	< 0.05	<0.05	0.0735	< 0.05	×0.05	×0 0×	8 9	3 6	0.0010	8 6	80.02
42818-022 SM1-1-816	<0.05	<0.05	<0.05	<0.05	< 0.05	×0.05	<0.05	< 0.05	0.0680	× 0.0\$	0.0519	×00×	800	8	0000	800	S
42818-023 SM1-2-816	< 0.05	<0.05	<0.05	<0.05	< 0.09	×0.05	<0.05	< 0.05	× 0.05	< 0.05	60.0	\$0.0×	800	8 6	6.633	S 5	800
42818-024 SMI-3-816	< 0.05	< 0.05	× 0.03	<0.05	<0.05	< 0.05	< 0.05	< 0.05	× 0.05	× 0.0\$	×0.05	2000	800		2000	20.00	20.02
													3	300	07170	V (100	V 0.03
42818-025 C + 0.10 PPM	0.0751	0.0742	0.0643	0.0757	0.0736	0.0458	0.0822	0.102	910	=	5	361.0	3				
42818-025 C + 0.010 PPM	٧×	¥	¥	ž	¥	Ϋ́	ž	ź	ź	ź	ž	C X	31.5	77 17	0.133	0.0735	ž
	75.1	74.2	64.3	75.7	73.6	45.8	87.7	٤	9	:	1		5	٤	Š.	ž	0.000655
42818-026 SM1-4-816	<0.05	< 0.05	<0.05	×0.05	800	2500	8	8 6	۲.		3	133	8	121	155	73.5	6.55
42818-027 SM1-5-816	< 0.05	< 0.05	<0.05		< 0.05	0.486	800	800	+	2000	0.12/	0.0973	0.0515	<0.05	0.0840	<0.05	0.940
42818-028 SMI-54-816	< 0.05	<0.05	<0.05	< 0.05	<0.05	× 0.08	<0.05	800	800	8 6	3 8	9 8	0000	<0.05	0.0626	×0.05	0.0951
42818-029 SM1-6-816	< 0.05	<0.05	<0.05	<0.05	< 0.05	0.436	× 0.05	×0.08	┼	800	8	8 6	9 6	0.00	0.0538	×0.0×	0.259
42818-030 SM2-1-816	×0.05	×0.08	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	-	×0.05	\$0.0V	8 0	300	60.00	0000	80.00	0.410
42818-031 SMZ-2-816	<0.05	× 0.05	×0.08	< 0.05	<0.05	0.341	<0.05	< 0.05	-	<0.05	0.0671	0.0655	800	3 6	20.00	000	0.0
42818-032 SMZ-3-816	<0.05	<0.05	<0.05	< 0.05	< 0.05	0.367	<0.05	< 0.05	<0.05	V 0.05	A0 00	800	800	8 6	100.0	20.00	0.370
42818-033 SM2-4-816	<0.05	<0.05	×0.08	<0.05	<0.05	0.274	×0.05	-	-	+	2000	200	3 8	8 6	7,000	CO.05	0.286
42818-034 SM2-5-816	<0.05	<0.05	<0.05	<0.05	< 0.05	0.227	<0.05	-	├	+	×0.0	8 00	8 6	3 6	0.00	S 6	0.772
42818-035 SM2-6-816	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	0.155	<0.05	<0.05	├	 	+	0000	2 6	3 6	000	60.00	0.0/15
									ł	1	┨	2	33.7	50.07	0.0/0	< 0.03	1.798

Table I. Summary Table of Results for Soil and Sediment.

Sample Name	Bipbenyl	2,6-Di methy Insplatens	1,3-Dimethylmepholene	1,2-Dimethylasphalene	onoladqaal ydromin T-2, 5, 5,	Hexadecane	Phones	4,4'-Dimethylbiphenyl	ј-Мефу јј вогеве	Phonometries and a second seco	энгэнцик	2-Methy iphenanthrene	9-Мейру Імперилесево	эсэнтана уррсанарсан	2-Ethylanthraces	9.10-Dimethylandhraceae	Нехасьююствая
42818-036 SM3-1-816	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	0.0443	<0.05	0.398
42818-037 C + 0.010 PPM	0.00654	0.0134	0.00707	0.0124	0.00970	0.0226	0.0166	0.0158	0.020	0.0178	0.0235	0.0304	0.0171	0.0140	0.0279	0.0103	¥
42818-037 C + 0.001 PPM	ž	٧×	¥	ž	ž	¥	¥	¥	ž	ž	ž	¥	¥	٧×	¥	¥	0.000428
★ RECOVERY	85.4	75	70.7	121	97.0	226	<u>2</u>	158	701	175	235	30.	171	140	23	103	42.8
42818-038 SM3-14-816	<0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
42818-039 SM3-2-816	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0	< 0.05	<0.05	×0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
42818-040 SM3-3-816	< 0.05	< 0.05	0.0670	< 0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05
42818-041 SM3-4 916	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.09	×0.05	< 0.05	< 0.05
42818-042 SM3-5-816	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.09	< 0.09	<0.05	< 0.05	< 0.0\$
42818-043 SM3-6-816	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05
42818-044 SU1-1-816	<0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	0.0535	< 0.05	< 0.05
42818-045 SU1-2-816	<0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.08	<0.05	<0.0 5	<0.05	< 0.05	<0.05	0.185	< 0.05	< 0.05
42818-046 SU1-24-816	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	×0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05
42818-047 SUI-3-816	<0.05	< 0.05	0.245	<0.05	<0.05	0.0891	<0.05	<0.05	<0.0	<0.08	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	0.154
42818-048 SU1-4-816	< 0.05	< 0.03	0.373	<0.05	<0.05	9.18 18	<0.05	0.0827	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	0.0978	<0.05	0.285
42818-049 C + 0.10 PPM	0.0626	0.0642	0.0607	0.0689	0.0678	0.107	0.0833	0.0645	0.0936	0.101	0.105	0.127	0.0989	0.122	0.130	0.0606	YN.
42818-049 C + 0.010 PPM	٧	¥	٧٧	X	ž	٧×	ž	Y.	¥	¥	ž	ž	٧×	NA NA	٧×	٧×	0.00343
★ RECOVERY	62.6	64.2	60.7	68.9	8.79	107	83.3	84.5	93.6	101	55	121	98.9	122	130	9.09	34.3
42818-050 SU1-5-816	< 0.05	<0.05	<0.0>	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	0.0513	< 0.05	<0.05
42818-051 SU1-6-816	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	0.0514	<0.05	0.143

Table I. Summary Table of Results for Soil and Sediment.

-Ethylanthraceae , 10-Dimethylanthraceae lexachloroethaae	6 2	\$0 0×	800	80.0	×0.05	800	×0.0×	×0.05	×0.0×		0.111 0.0463 NA	S Z	16.3	0 0000		<0.0>	\$0.0\$ \$0.0\$	\$0.00 V		\$0.0\$ \$0.0\$ \$0.0\$	0.05 0.05 0.05 0.05 0.05	\$0.0 \ \$0
sarutnasadq ydsanid-8,	ع ا	╂	┼	┼	├	┼─	┼	├	-	<u> </u>	0.104	├		8	╁	5.5	-	+	 		 	
- Methy landracens	800	40.05	< 0.05	< 0.05	<0.05	<0.05	×0.05	<0.05	<0.05		0.0841	ž	3	< 0.05	< 0.05		< 0.05	× 0.05 × 0.05	\$0.05 \$0.05 \$0.05	0.0 × 0.0 ×	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-Methy iphensalitese	V 0.05	×0.08	< 0.05	× 0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05		0.107	ž	101	< 0.05	< 0.05		<0.05	0.050.05	× 0.05 × 0.05 × 0.05	0.00 × 0.	<0.05<0.05<0.05<0.05<0.05	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0
Andersone	, 0.00	<0.05	× 0.05	× 0.05	< 0.05	<0.05	× 0.08	< 0.05	< 0.05		0.0891	۲	1.68	< 0.05	< 0.05	800/	3	<0.05 0.05	× 0.0 × 0.0 × 0.0 × 0.0	A 0.00 80.00 80.00	\$0.05\$0.05\$0.05	6.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
- Permitatione	× 0.08	× 0.05	× 0.05	× 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05		0.0916	٧×	91.6	< 0.05	< 0.05	<0.05		× 0.05	<0.05	<0.05 0.0526 <0.05	<0.05 0.0526 <0.05 <0.05	<pre><0.05 0.0526 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 </pre>
I-МефуПлотеве	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05		0.0648	¥	84.8	<0.05	< 0.05	< 0.05		< 0.05	<0.05	<0.05 <0.05 0.0522	<0.05 <0.05 <0.05 <0.05	<0.05<0.05<0.05<0.05
6,4'-Dimethy Biphenyl	6.0 0	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05		0.0839	VV VV	83.9	<0.05	< 0.05	< 0.05		< 0.05	<0.05	<0.03	< 0.00< 0.05< 0.05	\$0.05 \$0.05 \$0.05 \$0.05
эвэлон[]	< 0.05	0.0541	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		0.0860	NA	86.0	< 0.05	< 0.05	< 0.05		<0.05	× 0.03	< 0.08 < 0.08 < 0.06	0.050.050.060.05	< 0.05< 0.05< 0.05< 0.05
seesopero H	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05		0.0945	¥	24.5	< 0.05	< 0.05	<0.05	200	< 0.00	< 0.05	× 0.05 × 0.05 × 0.05	 <a <="" href="https://www.emaps.com/" td=""><td>\$0.05\$0.05\$0.05</td>	\$0.05\$0.05\$0.05
S.3.3Trimethylnaphalene	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05		0.0744	¥	74.4	<0.05	< 0.05	< 0.05	2 0 V		<0.05	× 0.05	× 0.05 × 0.05	× 0.05 × 0.05 × 0.05
1,2-Dimethylmephalens	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05		0.0767	¥	76.7	< 0.05	< 0.05	< 0.05	< 0.05					
1,3-Dimethylmaphalens	~0.0	< 0.03	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05		0.0691	ž	99.1	< 0.05	<0.05	< 0.05	< 0.05		< 0.05	<0.05	<0.05 0.0641 <0.05	<0.05 0.0541 <0.05 <0.05
2,6-Dimethylasphaleae	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		0.0715	¥	71.5	<0.05	< 0.05	< 0.05	< 0.05		<0.05	<0.05	<0.05	<0.05 <0.05 <0.05 <0.05
Biphenyl	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05		0.0685	¥	68.5	< 0.05	< 0.05	< 0.05	<0.05		<0.05	< 0.05	< 0.05 < 0.05 < 0.05	\$0.05 \$0.05 \$0.05
Sample Name	42818-052 SU2-1-816	42818-053 SU2-2-816	42818-053 \$U2-3-816	42818-055 SU2-4-816	42818-056 SU2-44-816	42818-057 SU2-5-816	42818-058 3U2-6-816	42818-059 SU3-1-816	42818-060 SU3-2-816		42818-061 C + 0.10 PPM	42818-061 C + 0.010 PPM	★ RECOVERY	42818-062 SU3-3-816	42818-063 SU3-4-816	42818-064 8U3-5-816	42818-065 SU3-6-816		42818-066 SB4-1-817	42818-066 SB4-1-817 42818-067 SB4-2-817	42818-067 SB4-2-817 42818-067 SB4-2-817 42818-068 SB4-24-817	42818-066 584-1-817 42818-067 584-2-817 42818-068 584-24-817 42818-069 584-3-817

Table I. Summary Table of Results for Soil and Sediment.

	,	,	,																			
Seechloroethene	V 0.05	V0.0		ž	0.000546	2.0	0.0787	0.187	0.195	0.302	0.430	0.171	0.228	0.238	0.132	0.209	0.123		¥	D.00135	27.0	0.199
9,10-Dimethylandracene	× 0.05	×0.05		0.0243	¥	24.3	< 0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	0.105	0.0764	0.0542	<0.05	< 0.05		0.0393	¥	78.6	< 0.05
2-Ethylandracene	0.148	0.138		0.0552	ž	\$5.2	0.0546	<0.05	0.0560	0.0750	0.131	0.221	0.227	0.440	0.276	0.227	0.230		0.189	ž	378	< 0.05
s earthmensd qlytha mi C-d, E	<0.0>	<0.05		0.0272	٧٧	27.2	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	0.0502		0.0981	ž	8	< 0.05
9-Мейру Іванірласска	< 0.05	< 0.05		0.0675	NA	67.5	< 0.05	<0.05	<0.05	<0.05	0.0530	< 0.05	<0.05	0.0514	< 0.05	< 0.05	< 0.05		9690.0	×	180	<0.05
2-Мейу ірбеланівтве	<0.05	<0.05		0.0228	ΥN	22.8	< 0.05	<0.05	< 0.05	< 0.05	0.0756	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.241	۸۸	482	0.0647
Апйилееве	×0.05	× 0.05		0.0242	٧	24.2	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05		0.128	NA A	256	< 0.05
Phenaethrens	<0.05	<0.05		0.0238	¥	23.8	<0.05	<0.05	<0.05	< 0.05	< 0.05	0.104	<0.05	< 0.05	<0.05	<0.05	<0.05		0.509	NA A	1018	0.0526
1-Methy Uluorene	<0.05	<0.05		0.0682	ž	68.2	<0.05	0.0517	0.0517	0.0704	0.0827	0.0912	0.0660	0.0756	0.0575	< 0.05	<0.05		0.143	Ϋ́	286	0.0529
lyandqidiyamid-'+,+	< 0.05	< 0.05		0.0283	ž	28.3	<0.05	<0.05	<0.05	< 0.05	×0.08	<0.03	< 0.05	< 0.05	<0.05	<0.05	<0.05		0.0656	¥	131	< 0.05
agenoul?]	< 0.05	<0.05		0.0230	¥	23.0	< 0.05	<0.05	< 0.03	<0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05		0.0604	¥	121	<0.05
эсегоорехээн	< 0.05	1.307		0.0385	ž	38.5	<0.05	0.0853	<0.05	< 0.05	< 0.05	0.225	<0.05	0.315	<0.05	<0.05	0.479		0.0363	¥	27.6	<0.05
2.5.5-Trimethylamphalene	< 0.05	<0.05		0.0151	ž	15.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.08	<0.05	<0.05	<0.05	<0.05		0.0588	¥	118	<0.05
1,2-Dimethylmaphalens	< 0.05	<0.05		0.0221	ž	22.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		0.0647	¥	621	< 0.05
emiedqualythemid-E, I	< 0.05	<0.05		0.0108	ž	8.01	<0.05	991.0	<0.05	< 0.05	<0.05	<0.05	×0.05	<0.05	<0.05	<0.05	<0.05		0.0470	ž	3 .	< 0.05
2,6-Dimethylmaphalene	<0.05	< 0.05		0.0135	¥	13.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	20.0 2	<0.05	<0.05	<0.05		0.0479	ž	95.7	<0.05
Biphenyl	<0.05	<0.05		0.0130	ž	13.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05		0.0441	ž	88.2	<0.05
Sample Name	42818-071 SB4-5-817	42818-072 SB4-6-817		42818-073 C + 0.10 PPM	42818-073 C + 0.001 PPM	% RECOVERY	42818-074 SM4-1-817	42818-075 SM4-2-817	42818-076 SM4-3-817	42818-077 SM4-4-817	42818-078 SM4-5-817	42818-079 SM4-6-817	42818-060 SU4-1-817	42818-081 SU4-2-817	42818-062 SU4-3-81	42818-083 8U4-4-817	42818-084 SU4-5-817		42818-085 C + 0.050 PPM	42818-085 C + 0.005 PPM	* RECOVERY	42818-086 SU4-6-817

Table I. Summary Table of Results for Soil and Sediment.

Sample Name	Bipbeayl	2,6-Dimethy Imaphalene	3.3-Diractay baspalene	1,2-Dimethylpsphalens	Smoledqualythonin1-2, E, S	Hexadocans	esson(i	l (4'-Dimethylbiphenyl	1-МефуПлоксае	Phonestrac	Anthracese	2-Месілу Іррепалійстве	9-Мейу Івайласеве	secretorensely(typensicle);	2-Ethy landaraceae	9.10-Diractly beathraces	seedboroldsexs!
42818-067 SU4-6d-817	< 0.05	×0.08	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	0.0902	× 0.05	9500
42818-068 SD2-1-815	< 0.05	<0.08	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	0.109	×0.05	0.0603
42818-069 SD2-1d-815	<0.05	< 0.08	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	0.118	< 0.05	0.183
42818-090 SD2-2-815	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	0.0680	<0.05	< 0.05
42818-091 SD2-3-815	< 0.05	< 0.05	< 0.03	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	0.0972	<0.05	0.190
42818-092 SD2-4-815	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	0.184	<0.05	0.490
42818-093 SD2-5-815	<0.05	<0.05	< 0.05	<0.05	< 0.05	0.377	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	0.231	< 0.05	< 0.05
42818-094 SD2-6-815	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	× 0.05	<0.05	0.143	<0.05	0.455
42818-095 SD2-7-815	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	0.112	<0.05	0.200
42818-096 SD2-8-815	< 0.05	< 0.05	< 0.09	< 0.05	< 0.05	0.673	< 0.05	<0.05	0.0639	<0.05	< 0.05	<0.05	<0.05	< 0.05	0.147	<0.05	0.259
42818-097 SD2-9-815	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	0.137	<0.05	<0.05
42818-098 C + 0.050 PPM	0.0307	0.0324	0.0311	0.0392	0.0365	0.0326	0.0395	0.0429	0.0438	0.0488	0.0430	0.0521	0.0237	0.0160	0.0238	0.000	٧×
42818-098 C + 0.005 PPM	¥	Ϋ́ν.	¥	ž	٧×	٧	¥	¥	ž	٧×	٧×	٧٧	NA	¥	V.	٧×	0.000864
	61.4	2.2	62.2	78.4	73.0	65.2	79.0	8.5.8	87.6	97.6	86	104	47.4	32.0	47.6	0.0	17.3
42818-099 SD2-10-815	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.161	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	× 0.05	<0.05
42818-100 3D1-1-816	<0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	0.133	< 0.05	0.0562
42818-101 SD1-2-816	<0.05	< 0.05	<0.0>	< 0.08	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	× 0.0	× 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	0.133
42818-102 SD1-3-816	<0.05	<0.0	< 0.05	< 0.09	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.147	< 0.05	0.198	0.422	< 0.05	<0.05
42818-103 SD3-1-816	×0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	0.0845
42818-104 SD3-2-816	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.237	< 0.05	<0.05	<0.05	0.0605	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05
42818-105 SD3-3-816	<0.05	60.0	<0.05	< 0.05	< 0.05	< 0.03	<0.05	×0.05	< 0.05	0.0637	< 0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05

Table I. Summary Table of Results for Soil and Sediment.

	Biphenyl	2,6-Diencthy Inspiratore	anstadynatythmide £, t	ansladquadydnamids.S.l	2,5,5-Trimethymaphalene	Нехадесаве	agronfi	l vandqidi vatnarid - '+,1	-Мефу Плотеве	SECTION CO.	Anthracese	2-Methy lphenanthrens	ensoenthaul yddolyf - (enordamenodophomid-0,	у-Едуу Імофилесеве), 10-Dimethylambracene	fexachloroethane
	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	0.0647	<0.05	0.0784	<0.05	<0.05	0.163	< 0.05	< 0.05
	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	×0.08	< 0.05	<0.05	< 0.05	< 0.05	<0.05	0.0985
	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	0.0 0	<0.05	<0.05	× 0.05	<0.05	0.112
	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	0.247
	< 0.05	< 0.05	<0.05	< 0.05	<0.05	0.536	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	0.137
42818-111 C + 0.10 PPM	0.0698	0.0720	0.0666	0.0736	0.0754	0.0691	0.0794	0.0688	0.0955	0.109	0.112	0.131	0.122	0.132	0.149	0.0813	ž
42818-111 C + 0.010 PPM	٧×	¥	Y.	¥	ž	¥	Y.	Ϋ́	NA	NA	Ϋ́	ΝA	¥	NA	٧N	¥	0.00417
* RECOVERY	8.69	72.0	9.99	59.7	75.4	69.1	79.4	88.8	95.5	109	112	131	122	132	671	81.3	41.7
	< 0.05	<0.05	< 0.05	< 0.05	<0.05	739.0	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	0.0947	< 0.05	0.286
42818-113 SD3-10-816	<0.05	<0.05	< 0.05	< 0.05	< 0.05	0.502	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	0.0804	< 0.05	0.214
	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.345	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.05	0.0586	< 0.05	0.421
	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.454	<0.05	~0.0	<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	0.000	< 0.05	0.374
	<0.05	< 0.05	<0.05	<0.05	< 0.05	0.366	<0.05	×0.05	<0.03	< 0.05	< 0.05	<0.05	< 0.05	<0.05	0.0669	< 0.05	< 0.05
	< 0.05	< 0.05	<0.05	<0.05	< 0.05	0.426	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	0.147	< 0.05	0.0732
	< 0.05	< 0.05	<0.05	<0.05	<0.05	0.247	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	0.106	< 0.05	< 0.05
	< 0.05	<0.05	<0.05	<0.05	< 0.05	0.255	×0.0	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	0.105	< 0.05	0.16
	<0.09	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05
	<0.05	< 0.05	<0.05	< 0.05	< 0.05	0.208	× 0.05	< 0.03	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05
	< 0.05	< 0.05	×0.0\$	<0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	0.0668	< 0.05	< 0.05	0.0790	< 0.05	< 0.05
	< 0.05	×0.05	×0.08	<0.05	< 0.05	<0.05	<0.05	<0.05	0.0781	<0.05	0.0608	0.0524	<0.05	<0.05	0.0586	< 0.05	< 0.05
42818-124 SD4-10-817	< 0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.0>	< 0.05	< 0.05	<0.05	<0.05	0.0815
					ĺ												

Sample Name	Bipbeayl	2,6-Dienectry Insephences	1,3-Dimethylnaphalene	1,5-Dimethylnaphatene	2,5,5-Trimethylosphalene	omerobareH	SECTION!	1\ cashqi di\t inati Q-\\$\\$	1-Methylfhorene	Phonomena	assonibaA	2-Ме с бу фосологическо)- Месіру і войи эссов	30-6-Dimensylythomid-0, 8	3-Ефурофилеств	9.10-Dimethylanthreene	Hexachlorocthans
42818-200 C + 20.0 PPB	8	3.30	5	36.7		3											
42818-200 C + 1.0 PPB	ž	ž	\$ \$	2	3.43	25.33	3.39	2.07	3.78	×.08	5.01	2.86	3.62	2.42	1.85	1.89	ž
≸ RECOVERY		13	2	0 9	200	¥ 5	Š.	¥2	Š.	۲ ک	ž	ž	۲×	ž	٧×	ž	0.517
42818-201 SW1-1-816		V 1.0	<1.0	<1.0	1.10	<1.0	1,92	6.45	15.1	21.8	20.3	12.4	13.7	10.2	4.9	1.5	51.6
42818-202 SW1-2-816	V 1.0	<1.0	<1.0	<1.0	1.13	<1.0	1.92	<1.0	0.15	017	917	2 0	2 5	0.10	0 0	9 3	012
42818-203 SWI-3-816	0.1×	×1.0	<1.0	<1.0	1.21	<1.0	4.05	<1.0	0.1>	010	8.	01×	2 0		0.17	2.10	0 7
42818-204 SW2-1-815	¢1.0	<1.0	<1.0	<1.0	1.21	<1.0	2.57	<1.0	0.1.0	¢1.0	0.1×	017	017	2 0	2 0	0.17	0.10
42818-205 SW2-14-815	<1.0	<1.0	<1.0	<1.0	3.	<1.0	3.31	<1.0	<1.0	0.1	0.1>	<1.0	V 10	017	210		
42818-206 SW2-2-815	<1.0	V-1.0	<1.0	<1.0	1.31	<1.0	2.49	<1.0	<1.0	0.1.0	0.1.0	0.15	V 10		VI 0		
42818-207 SW2-3-815	V1.0	¢1.0	<1.0	<1.0	1.89	<1.0	9.60	· <1.0	1.00	1.13	<u>1</u>	0.15	35	0.15	017	917	
42818-206 SW2-4-815	<1.0	V 1.0	<1.0	<1.0	1.09	<1.0	2.49	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	017	V 10	017
42818-209 SW2-5-815	<1.0	0.15	<1.0	<1.0	1.25	<1.0	2.96	¢1.0	<1.0	<1.0	<1.0	<1.0	<1.0	¢1.0	0.15	<1.0	0 T >
42818-210 SWZ-6-815	<1.0	V1.0	<1.0	<1.0	1.15	V 1.0	3.18	0.1A	<1.0	<1.0	<1.0	0.15	0.15	0.15	017	017	5
42818-211 C + 2.00 PPB	2.	1.63	1.58	1.95	1.71	2.04	4.53	1.68	2.58	2.72	2.60	2.18	2 50	9 10	2	3	1
42818-211 C + 0.20 PPB	ž	ž	Y.	¥	¥	ž	٧	Y.	ž	ž		ź	ž	ž	¥ X	2	8080
* RECOVERY	73.5	81.5	72.5	75.0	63.5	32.5	127	75.0	90.0	101	82.0	89.5	85.0	8	200		413
42818-212 SW2-7-815	<1.0	V-1.0	<1.0	0.1>	2.20	<1.0	7.04	V-1.0	8:	1.24	2	0.7	=		;		,
42818-213 SW2-8-815	<1.0	0.1^	<1.0	0.1>	1.13	<1.0	3.72	0.15	0.1.0	012	0 7	5	5	1	? ?	0.17	0.17
42818-214 SW2-9-815	<1.0	0.1 ₀	<1.0	<1.0 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	8.	<1.0	5.15	0.1.0	0.15	0.10		0.0	=			2 3	2 5
42818-215 SW3-1-816	<1.0	V 1.0	<1.0	<1.0	0.1	<1.0	2.14	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.15	010	0.10

Table II. Summary Table of Results for Water.

Sample Name	Bipheayl	2,6-Dimethy Insphalene	2.3-Dimothylmephalcae	1,2-Dimethylasphalene	ansiadqaniydənin17-2,8,8	Неханесеве	Fluorens	l vasdqidi vatsarid-'b,b	1-Мету Шиотепе	Phenatheas	эвээглиргү	2-Mechy lphenonthrens	9-Methylanthracene	3.6-Dimethylphenanthran	2-Eddy kanthraceae	9.10-Dimethylandurecae	Нехасьююсеваяс
42818-216 SW3-2-816	o.1.	<1.0	<1.0	<1.0	1.31	<1.0	8.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.1 >
42818-217 SW3-3-816	¢1:0	<1.0	<1.0	<1.0	2.26	<1.0	9.43	<1.0	1.25	1.23	2.75	<1.0	<1.0	<1.0	0'1>	<1.0	0.1>
42818-218 SW3-6-816	¢1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.66	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.1>
42818-219 SW3-8-816	V-1.0	<1.0	<1.0	<1.0	1.32	<1.0	3.70	<1.0	<1.0	<1.0	¢1.0	<1.0	<1.0	<1.0	0'1>	<1.0	0.1.0
42818-220 SW4-1-817	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.29	<1.0	<1.0	0.1	<1.0	<1.0	<1.0	<1.0	<1.0	0.1>	0.1.0
42818-221 SW4-2-817	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.37	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.1.5
42818-222 C + 0.20 PPB	0.32	0.25	0.23	99.0	99.	0.33	6.21	0.35	1.18	1.02	1.28	0.85	1.21	0	1.01	0.37	٧
42818-222 C + 0.020 PPB	ž	ž	¥	¥	ž	¥	¥	ž	¥	¥	Ş	¥	¥	NA	NA	NA	0.00482
* RECOVERY	75.0	123	20.0	282	50.0	0	92	85.0	200	155	8	230	160	0	0.0	50.0	16.9
42818-223 SW4-3-817	V-1.0	<1.0	<1.0	<1.0	1.17	2.03	8.07	0.1>	1.2	1.23	1.63	<1.0	1.55	<1.0	1.17	<1.0	<1.0
42818-224 SW4-4-817	<1.0	<1.0	<1.0	<1.0	1.76	<1.0	08.90	<1.0	<1.0	0.1×	1.45	o:1>	1.13	<1.0	<1.0	<1.0	<1.0
42818-225 SW4-5-817	<1.0	<1.0	<1.0	<1.0	<1.0	V 1.0	3.12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0
42818-226 SW4-6-817	<1.0	<1.0	<1.0	<1.0	\$.	2.41	7.60	<1.0	1.12	<1.0	1.33	o.1.0	1.21	<1.0	1.14	<1.0	<1.0
42818-227 SW4-7-817	0.15	<1.0	<1.0	<1.0	1.68	1.71	7.09	0.1×	V 1.0	<1.0	1.29	<1.0	1.12	<1.0	1.07	<1.0	<1.0
42818-228 SW4-7d-817	Q.1.0	<1.0	<1.0	<1.0	1.56	2.27	5.34	<1.0	V-1.0	v1.0	01.10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
42818-229 SW4-8-817	<1.0	<1.0	<1.0	<1.0	1.59	1.78	5.56	<1.0	¢1.0	<1.0	1.18	<1.0	<1.0	<1.0	1.00	<1.0	<1.0
42818-230 SW4-9-817	0.15	v1.0	<1.0	<1.0	1.35	<1.0	4.42	<1.0	<1.0	<1.0	1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
42818-231 SW4-10-817	0.15	0.15	<1.0	<1.0	1.45	V-1.0	2.66	<1.0	<1.0	<1.0	1.03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
42818-232 Control Water	0.17	۰	0.13	0.45	S.	1.39	4.81	0.18	0.78	0.71	96.0	0.39	0.89	0.39	0.87	0.27	0.00145

Table III. Summary Table of Results for Bats and Guano.

	,					_		,			,			,	, ,	 ·		,				,		,		
Hexachloroethane		¥	0.00411	41.1	<0.09	¥0.0×	< 0.10	< 0.10	< 0.05	< 0.03	<0.08	×0.08	<0.04	< 0.05	< 0.10	٧×	1210.0	25.4	< 0.10	< 0.10	<0.07	<0.05	<0.10	< 0.06	<0.06	< 0.05
9,10-Dimethylanthreene		0.0285	٧٧	28.5	< 0.09	×0.04	< 0.10	< 0.10	<0.05	0.0604	0.0844	0.118	<0.04	< 0.05	0.252	0.820	٧X	82.0	<0.10	<0.10	<0.07	0.326	<0.10	0.170	< 0.06	< 0.05
2-Ethylanderscene		0.245	NA NA	245	0.525	0.284	0.551	0.514	0.125	0.448	0.818	2.172	0.285	0.318	0.489	1.459	٧V	146	1.150	1.368	0.294	0.497	1.363	0.284	0.313	0.152
3.6-Dimenskylptomicae		0.162	٧N	162	0.169	0.149	0.326	0.18	< 0.05	0.0862	0.209	0.336	0.124	0.163	0.249	1.194	٧×	119	0.239	0.211	0.135	0.232	0.225	0.130	0.0826	0.0646
9-Метру ізпартассаю		0.180	NA	180	0.323	0.0689	0.238	0.225	0.0809	0.190	0.732	1.163	0.121	0.142	0.122	1.264	VN.	126	0.764	0.607	0.270	0.224	0.862	0.0924	0.262	0.116
2-Мефурревартеля		0.158	NA	158	0.221	0.0843	0.247	0.207	0.0578	0.0900	0.283	0.503	0.135	0.105	0.189	1.145	٧٧	115	0.275	0.334	0.148	0.186	0.370	0.105	0.114	0.0661
amostuba		0.138	NA NA	138	0.0988	0.0430	<0.10	<0.10	< 0.05	0.0564	0.141	0.196	0.0592	< 0.05	<0.10	1.051	NA NA	105	0.127	0.136	0.0742	0.0549	0.159	< 0.06	< 0.06	0.0509
Респектов		0.130	٧٧	130	0.172	0.0911	0.156	0.156	0.0534	0.174	0.480	0.801	0.117	0.0653	0.131	1.147	Y.	115	0.471	0.439	0.0931	0.126	0.519	0.0731	0.142	< 0.05
1-МефуШиотевь		0.119	٧×	119	0.290	0.0454	< 0.10	<0.10	< 0.05	0.0573	0.267	0.428	0.0665	< 0.05	<0.10	1.051	٧×	105	0.248	0.241	< 0.07	0.0798	0.317	<0.06	0.0773	<0.05
4,4°-DimethyBipbenyl		9.10	۲×	901	< 0.09	< 0.04	<0.10	<0.10	< 0.05	0.0259	0.113	< 0.08	< 0.04	< 0.05	< 0.10	0.961	Y.	1.96	< 0.10	< 0.10	<0.07	< 0.05	0.162	< 0.06	< 0.06	< 0.05
Fhoreste		901.0	٧×	901	0.236	0.0659	0.105	0.132	0.0893	0.0488	0.152	0.241	0.0864	< 0.05	0.115	0.405	NA	40.5	0.131	0.169	0.0850	0.0684	0.263	< 0.06	< 0.06	0.0552
Hexadecesse		0.107	٧×	101	<0.09	<0.04	< 0.10	< 0.10	< 0.05	< 0.03	0.0983	0.134	<0.04	< 0.05	<0.10	916.0	NA	91.6	<0.10	< 0.10	<0.07	< 0.05	0.116	< 0.06	< 0.06	< 0.05
3.5.5.Trimethylasphalene		0.10	۲×	101	< 0.09	<0.04	< 0.10	< 0.10	< 0.05	< 0.03	< 0.08	< 0.08	< 0.04	< 0.05	< 0.10	0.887	٧×	88.7	< 0.10	< 0.10	<0.07	< 0.03	<0.10	< 0.06	< 0.06	< 0.03
1,2-Dimethylanephalene		0.0946	٧×	24.6	< 0.09	<0.04	<0.10	< 0.10	< 0.05	< 0.03	<0.08	<0.08	< 0.04	< 0.03	<0.10	0.752	NA	75.2	<0.10	<0.10	<0.07	<0.05	<0.10	<0.06	< 0.06	< 0.05
3-1-Dimethylamphalene		0.0874	ž	87.4	< 0.09	< 0.04	<0.10	< 0.10	< 0.05	0.0361	< 0.08	< 0.08	< 0.04	< 0.05	<0.10	0.712	۲	71.2	<0.10	<0.10	<0.07	< 0.05	<0.10	< 0.06	< 0.06	< 0.05
2,6-D imethy kraphalene		0.0909	ž	6.06	< 0.09	< 0.04	< 0.10	< 0.10	< 0.05	< 0.03	< 0.08	< 0.08	< 0.04	< 0.05	<0.10	0.698	¥	8.69	< 0.10	< 0.10	<0.07	< 0.05	< 0.10	< 0.06	< 0.06	< 0.05
Bipbenyl		0.0995	ž	99.5	< 0.09	< 0.04	< 0.10	< 0.10	< 0.05	< 0.03	< 0.08	< 0.08	× 0.04	< 0.05	<0.10	0.799	ž	80.0	< 0.10	< 0.10	< 0.07	< 0.05	< 0.10	< 0.06	< 0.06	< 0.05
Sample Name		42818-290 C + 0.10 PPM	42818-290 C + 0.010 PPM	★ RECOVERY	42818-291 TM1-1-808	(2818-292 TMI-2-809	42818-293 TM3-1-809	42818-294 TM3-2-810	42818-295 TM4-1-809	42818-296 TM4-1-810	42818-297 TM3-6-811	42818-298 TM4-1-811	42818-299 TM2-1-812	42818-300 TM2-11-812	42818-301 TM2-2-812	42818-302 C + 1.00 PPM	42818-302 C + 0.050 PPM	★ RECOVERY	42818-303 TM2-3-812	42818-304 TM2-4-812	42818-305 TM2-5-812	42818-306 TM4-1-812	42818-307 TM2-1-813	42818-308 TM4-1-813	42818-309 TM4-2-813	42818-310 TM4-3-813

Table III. Summary Table of Results for Bats and Guano.

searth3070fd3ax3i	200	200	17.0	8000
sassardheal ydsaeid -01,	901	0 9 9	0,212	\$0.00
-Ethy leaderneese	35 400	12.616	140g	1290
serutumensely (disentation)	18.772	977	<17.0	0.116
)- Мефулафиясеве	17.517	0.9>	21.983	0.340
?-Methy iphen miturene	15.424	0.9×	<17.0	0.168
учения при	<10.0	<6.0	<17.0	0.0707
Энглийнияс	< 10.0	<6.0	<17.0	0.203
1-Methylilmorene	< 10.0	<6.0	17.309	0.122
4,4'-Dimethylbiphenyl	< 10.0	<6.0	<17.0	< 0.05
Thoreas	< 10.0	<6.0	18.893	0.112
Hexadocana	< 10.0	<6.0	<17.0	0.0509
2,2,3-7-Trimethylmephalene	< 10.0	<6.0	<17.0	< 0.05
anoladquaquatomid-2,1	< 10.0	0'9>	<17.0	< 0.05
sestedquet(deseid-E,1	< 10.0	< 6.0	<17.0	< 0.05
2,6-D imethylasphalene	< 10.0	< 6.0	<17.0	< 0.05
Bipheayl	< 10.0	<6.0	<17.0	< 0.05
Sæmple Næne	42818-311 TM4-G2-808	42818-312 TM2-G-812	42818-313 TM2-G-813	42818-314 TM2-6-812

	1	T	,	<u> </u>	T	,T	T =		T	T			T	.T		1	Τ
- iexachloroethane		2	200	2 2	200	\$00V	\$0 0V	<0.05	\$0 0 V	20 0	20 0	800	800	2002	5000	<0.0×	<0.0
-01,0-Dimethylanthreene	5	0 0141	2	3	800	<0.0>	0.142	<0.05	0.251	\$0 Q	0.0720	800	800	\$0 0 V	\$0 O	0.0513	<0.05
2-Ethylanthraceae		0 228	2	2 2	35.0	0.259	0.295	0.981	0.450	81.0	0.761	0.167	0.119	0990	0.141	0.682	0.185
ocondinentaly laboratores		0.118	N	=	6 113	0.119	0.139	0.190	0.252	7500	0.131	0 0736	×0.0×	0.119	0.0607	0.132	× 0.05
9-Methy lambracese		251.0	Ž	2	0.180	0.125	0.0554	0.403	0.122	0.0619	0.338	0.0565	×0.08	0.313	0.0612	0.301	0.0659
у-Мефур разанда (20		0.147	Ž	1	0.156	0.126	0.108	0.275	0.283	0.0731	0.233	0.0891	0.0578	0.181	7990.0	0.213	0.0559
Anthreens		0.125	ž	123	0.0520	0.0651	0.0568	0.1215	0.0853	<0.05	0.0952	×0.05	0.0569	91.0	<0.0	0.0737	<0.05
Ресондівност		0.130	ž	82	0.133	0.129	0.119	0.433	0.169	0.0885	34.0	0.0775	0.0539	0.316	× 0.05	0.321	<0.05
1-МефуПлотеве		0.165	ź	165	90.10	0.0644	0.0580	0.261	0.101	<0.05	0.202	× 0.05	<0.05	0.193	× 0.05	0.196	<0.05
4,4'-Dimethy Bipbenyl		0.125	ž	125	< 0.05	< 0.05	< 0.05	0.0987	<0.05	<0.05	0.0803	<0.0×	<0.0>	0.0898	× 0.05	0.0949	< 0.05
Fhorese		0.191	ž	161	0.143	0.317	0.0770	0.340	0.283	0.234	0.333	0.210	0.172	0.348	0.113	0.361	0.229
Hexadecane		0.102	٧×	102	<0.05	<0.05	< 0.05	0.0695	< 0.05	< 0.05	0.0621	<0.05	<0.05	0.0761	< 0.05	0.0710	< 0.05
omstandgemiythominT-2, 2, 2, S		0.106	٧٧	106	< 0.05	<0.0>	<0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	0.0635	< 0.05	< 0.05	<0.05
1,2-Dimethylmaphaicne		0.118	ž	118	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dimethy knaphalene		0.0920	٧	92.0	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dimethy Insphalene		0.0930	¥	93.0	< 0.05	< 0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05
Biphenyl		0.0774	ž	77.4	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.0>	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05
Sample Name		42818-276 C + 0.10 PPM	42818-276 C + 0.010 PPM	RECOVERY	42818-277 TP4-1-814	42818-278 TP2-1a-815	42818-279 TF2-16-815	42818-280 TF2-2-815	42818-281 TF2-3-815	42818-282 TF2-4-815	42818-283 TF2-5-815	42818-284 TF2-6-815	42818-285 TF3-1-815	42818-286 TF3-2-81S	42818-287 TF3-3-815	42818-288 TF3-4-815	42818-289 TF3-5-815

9,10-Dimethylanthrace	0.0927 NA	0	92.7 17.9	<0.50 <0.50	<0.10 <0.10	< 0.03 < 0.03	<0.10 <0.10	<0.04 <0.04	0.0417 < 0.04	-	<0.06 <0.06	<0.05 <0.05	<0.05 <0.05	
2-Ethylanthracene	0.170	¥	170	1.318	0.307	0.0868	0.292	0.110	0.0813	0.150	0.164	0.115	0.128	
dimensalaj katsemidi-2, E	0.151	ž	151	< 0.50	<0.10	0.0393	<0.10	< 0.04	×0.04	<0.06	<0.06	<0.05	0.0908	
9-Methy isothracene	0.138	×	138	<0.50	0.116	< 0.03	<0.10	<0.04	<0.04	<0.06	<0.06	<0.05	< 0.05	
7-Мейу)расынайган	0.140	٧٧	140	< 0.50	<0.10	< 0.03	<0.10	0.0679	< 0.04	< 0.06	< 0.06	< 0.05	0.0510	
Anderscene	0.118	NA	118	<0.50	<0.10	< 0.03	0.115	< 0.04	<0.04	0.0601	< 0.06	< 0.05	0.0695	
Phenothenae	0.115	NA	115	<0.50	0.102	0.0429	0.102	<0.04	<0.04	< 0.06	<0.06	<0.05	0.0648	
1-МефуПвопеве	0.0623	Y.	82.3	<0.50	<0.10	< 0.03	<0.10	< 0.04	<0.04	<0.06	<0.06	<0.05	< 0.05	,
4,4'-Dimethy Biphenyl	0.0933	N	93.3	<0.50	<0.10	< 0.03	<0.10	< 0.04	<0.04	<0.05	<0.06	<0.05	<0.05	
Fluorene	0.0532	N N	53.2	< 0.50	< 0.10	< 0.03	< 0.10	×0.04	×0.04	< 0.06	0.0636	< 0.05	0.0566	7000
Hexadecase	0.0974	¥.	97.4	< 0.50	0.107	< 0.03	0.103	× 0.04	×0.04	< 0.06	<0.06	<0.05	< 0.05	70 01
2,3,5-Trimethy leaphale	0.0685	٧	68.5	<0.50	<0.10	<0.03	<0.10	×0.04	*0.04	< 0.06	<0.06	< 0.05	<0.05	200,
1,2-Dimethylnaphalene	0.0588	٧×	88.8	<0.50	<0.10	< 0.03	<0.10	×0.04	×0.04	< 0.06	< 0.06	< 0.05	< 0.05	200
I,3-Dimethylmephalens	0.0511	¥	51.1	<0.50	<0.10	< 0.03	<0.10	0.040	<0.04	<0.06	<0.06	0.0557	< 0.05	7
2,6-Dimethy insphalens	0.0527	٧	52.7	< 0.50	<0.10	< 0.03	<0.10	<0.04	<0.04	0.0659	< 0.06	< 0.05	< 0.05	300
Biphenyl	0.0700	VV	70.0	<0.50	<0.10	< 0.03	<0.10	<0.04	<0.04	< 0.06	< 0.06	<0.05	<0.05	5
Sample Name	42818-250 C + 0.10 PPM	42818-250 C + 0.010 PPM	* RECOVERY	42818-251 TII-808	42818-252 T14-808	42818-253 T11-809	42818-254 TI4-809	42818-255 TI3-810	42818-256 TI4-810	42818-257 TIS-811	42818-258 TI4-811	42818-259 TIZ-812	42818-260 TI2-813	C10 711 17C 018C7

	μλι	incthy happalene	encept) propholene	methy insphalene	Lrimethy inaphalene	30 833	æ	methy to specay l) Illuorese	our n	380	३६२७म्पायस्य	September 1	струфосилителе	ифлессие	осду), раздримскае	осфине
Sample Name	Bipber	z °e -D	i.3-D	1,2-0;	-5°E°Z	Hexade	Fhores	4'4D!	1-Medi	Person	Anthrac	у-Мефу	9-Medby	3,6-Dim	2-Ethyla	9'10-D !"	Hexachio
42818-263 C + 0.10 PPM	0.104	0.131	0.591	9116	191.0	91.0	1100			1							
42818-263 C + 0.010 PPM	42	ž	3	1				0.10	¥(;)	0.473	0.209	0.460	0.682	0.320	0.753	0.160	ž
	\perp	4	Š.	٤	¥Z	Š.	ž	¥	ž	ž	٧	٧×	¥	ž	٧	٧	0.00525
* KECOVERY		131	291	116	161	180	211	187	334	473	209	460	682	320	753	091	52.5
42818-264 SVI-2-816	0.898	< 0.05	0.250	<0.05	0.0645	0.0786	0.101	0.0647	0.122	0.120	0.114	0.299	0.289	0.243	0.358	0.516	80
42818-265 SVI-3-816	0.253	< 0.05	0.800	0.268	1.137	0.240	0.0920	<0.05	0.111	0.159	0.0949	0.245	0 244	81.0	,	8	3 3
42818-266 SV1-1-816	0.0673	0.234	0.675	2.856	1.548	0.870	0.492	0.347	0.158	0.314	81.0	0.50	22.0			R	600
42818-267 TV2-1-815	< 0.05	0.0654	8.406	<0.05	0.0833	0.169	0.0985	0.0983	8	3	8	200	0.327	0.278	0.377	6.308	\$0.02 V
42818-268 TV2-2-815	0.0833	0.0817	0.326	<0.05	0.20	2,5	0.50	22.0		3 3	000	0.20	X1.0	0.189	0.359	0.149	×0.03
42818-269 TV2-3-815	*0.0	70.0V	0.0655	700	200	5		3130	A)Ch	0.910	0.243	2.174	<0.05	0.300	4.493	0.122	×0.05
42818-270 TV3-1-815	800	800	3			5	0 1	OCO'O	CIMIN	0.101	0.0434	0.138	0.171	0.0984	0.175	0.0833	¥0.0v
		3.57	0,70	80.00	Q).02	0.0843	0.117	× 0.08	0.0900	<0.0	0.0662	0.186	0.233	0.141	0.233	0.103	<0.05
42818-271 TV3-2-815	< 0.05	< 0.05	0.0919	0.0614	0.0667	0.0526	0.179	0.153	0.309	0.513	0.157	0.383	0.696	971.0	0.888	0.173	200 2
42818-272 TV3-3-815	<0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	0.113	< 0.05	0.0870	0.101	0.0607	0.168	0.226	0.123	0 200	0.0530	800
42818-273 SV4-1-817	0.133	<0.05	0.149	< 0.05	< 0.05	0.0735	0.183	0.0734	0.102	99900	×0.05	0.140	771.0	11.0	0 23.4	0600	300
42818-274 SV4-2-817	<0.05	<0.05	0.0526	< 0.05	×0.05	0.0683	90/0/0	< 0.05	<u> </u>	0.130	×0.05	173	617	173	30.0	6,000	000
42818-275 SV4-3-817	< 0.05	×0.05	0.0525	0.0656	< 0.05	0.0671	0.183	0.0862	0.150	0.226	0.128	97.0	6		236.0	61.0	00.00
													7	0.100	0.330	0.114	< 0.05

Table VII. Summary Table of Results for GC/MSD Confirmation.

Serrop to Name	Det	Biphenyl	2,6-Dimedhylasphalene	eastadqualydromiG-E,1	1,2-Dimethylmepholene	ominatority inappaiene	Hexadecese	anotoniq	fymdid ymaid-'è,è	i-Methyliluorens	Services of T	ушриясене	2-Меску фесковитеро	9-Meetiny hearthenecene	3.6-Dimentary phenomenone	2-Pilly lenderscens	01.0-Dissochylandkracces	-fexachlorocthese
42818-078 SM4-5-817-PNA	Ð	× 0.05	× 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.0827	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.089	< 0.05	4 0.0 80.0
42818-078 SM4-5-817-PNA	MSD	< 0.05	× 0.08	< 0.05	< 0.05	> 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	× 0.05	< 0.05	< 0.05	0.03
42818-078 3M4-5-817-PL	Ð	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.0756	0.053	× 0.05	< 0.05	< 0.05	
42818-078 SM4-5-817-FL	MSD	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	× 0.05	< 0.05	< 0.05	< 0.05
42818-096 SD2-8-815-FL	Ð	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		0.0835	0	
42818-096 SD2-8-415-FL	MSD	< 0.05	< 0.05	× 0.05	< 0.05	> 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05
42818-207 SW2-3-815	£	< 1.0	< 1.0	× 1.0	< 1.0	1.89	< 1.0	9.60	< 1.0	1.00	1.13	1.44	< 1.0		< 1.0	< 1.0	-	
42818-207 SW2-3-815	MSD	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.32	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	0.1 ^	0
42818-223 8W4-3-817	Ð	< 1.0	< 1.0	< 1.0	< 1.0	2.27	2.03	8.07	< 1.0	1.22	1.25	1.63	< 1.0	1.55	0.1 >	1.17		
42818-223 SW4-3-817	MSD	< 1.0	< 1.0	o.1 >	0.1 ×	< 1.0	0.1 ^	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 <	< 1.0	< 1.0 < 1.0	< 1.0	0.1 ×
42818-260 TIZ-813-PNA	£	< 0.05	< 0.05	< 0.05	> 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
42818-260 TI2-813-PNA	MSD	× 0.05	< 0.05	× 0.05	< 0.05	> 0.08	× 0.05	× 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	> 0.05	> 0.05	× 0.05	× 0.05	< 0.05
42818-260 TT2-813-FL	£	< 0.05	< 0.05	< 0.05	> 0.05	× 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.061	> 0.05	950.0	0.0853	> 0.05	0.00
42818-260 TIZ-813-FL	MSD	× 0.05	A 0.05	× 0.05	< 0.05	× 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	× 0.05	× 0.8	× 0.05	> 0.05	< 0.05
42818-261 TI4-812-PNA	£	× 0.05	< 0.05	0.0518	< 0.05	< 0.05	< 0.05	< 0.05	> 0.05	< 0.05	< 0.05	< 0.05	0.0264	< 0.05	< 0.05	> 0.05	< 0.05	< 0.05
42818-261 TI4-812-PNA	SS	× 0.08	× 0.03	× 0.05	A 0.05	< 0.05	× 0.08	< 0.05	× 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	× 0.05	× 0.05	< 0.05
42818-261 TI4-812-FL	£	> 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.0535	0.052	0.0534	> 0.05	< 0.05	0.0893	> 0.05	< 0.05
42818-261 TI4-812-FL	MSD	A 0.05	× 0.05	< 0.05	× 0.05	> 0.03	× 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.03	< 0.05	> 0.05	< 0.05	< 0.05
42818-266 SVI-1-816-PNA	£	0.0673	< 0.05	0.675	< 0.05	0.355	0.687	0.436	0.288	0.0995	0.212	0.0865	0.195	0.117	0.147	0.181	0.0831	< 0.05
42818-266 SVI-1-816-PNA	MSD	× 0.05	× 0.05	A 0.05	× 0.05	< 0.05	< 0.05	< 0.05	< 0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
42818-266 SV1-1-816-FL	£	< 0.05	0.21	< 0.05	2.86	1.19	0.183	0.0553	0.0588	0.0583	0.102	0.0736	0.115	0.21	0.131	0.1%	0.286	0.214
42818-266 SV1-1-816-FL	MSD	> 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	× 0.05	< 0.05	< 0.05	× 0.05	× 0.05	< 0.05

Semple Name	Det	Biphenyl	cardedqualyatronica-0,S	omolantopant valuemici-E, I	3.2-Dimethylmethylmetene	2.5.5-Trimethylmopoleus	Herradocene	samouf?	4,4'-Dimethy Briphenyl	i-Methy Eleorens	oendenesd?	A STATE OF S	урсанира разрешения	у-ументуру раздилиссия	-6-Dimentaly phenomena	-Ethylendaraceae	3econthealybeacese	amaliconoldistrai
42818-268 TV2-2-815-PNA	₽	< 0.05	< 0.05	0.3257	< 0.05	0.0753	0.236	0.0759	960.0	0.384	0.581	0.107	0.22	< 0.05	0.149	3.37	\$ 0.0 \$ 0.0\$	H 0.0967
42818-268 TV2-2-815-PNA	MSD	< 0.05	< 0.05	< 0.05	× 0.08	× 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	× 0.05
42818-268 TV2-2-815-FL	£	< 0.05	0.0614	× 0.05	> 0.05	0.217	0.0674	0.204	0.117	¥1.0	0.329	0.136	1.952	< 0.05	0.151	1.12	0.122	
42818-268 TV2-2-815-PL	OSM	< 0.05	< 0.05	× 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	A 0.05	× 0.05	× 0.08	× 0.08	× 0.08	200 ×	, S	200
42818-280 TF2-2-815-PNA	£	< 0.05	< 0.05	> 0.05	< 0.05	< 0.05	< 0.05	< 0.05	9050:0	0.173	0.297	< 0.05	0.0998		0.0801			
42818-280 TF2-2-815-PNA	MSD	< 0.05	< 0.05	× 0.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	× 0.08	× 0.08	A 0.05	A 0.05	× 0.8	× 0.08	0	
42818-280 TF2-2-815-PL	Ð	< 0.05	< 0.05	A 0.05	< 0.05	< 0.05	< 0.05	0.292	< 0.05	0.0875	0.136	0.0845	0.175		ΙZ			
42818-280 TF2-2-815-FL	OSM	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.66	< 0.05	< 0.05	× 0.05	× 0.05	× 0.05	× 0.08	× 0.08	× 0.05	80 >		
42818-291 TMI-1-808-PNA	£	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.0918	< 0.09	0.236	< 0.09	e0.0			< 0.09			
42818-291 TM1-1-808-PNA	MSD	< 0.09 < 0.09		× 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	\$0.0 V	60.0 V	< 0.09	80.0 V	800		
42818-291 TM1-1-808-FL	£	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.144	< 0.09	< 0.09	0.0949	× 0.09	9.16					
42818-291 TMI-1-808-FL	MSD	× 0.09	¥ 0.08	< 0.09	× 0.09	< 0.09	× 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	× 0.08	0.0	< 0.09	< 0.09	60:00 V
42818-298 TM4-1-811-PNA	£	× 0.08	8 0.0 ×	< 0.08	× 0.08	× 0.08	> 0.08	< 0.08	< 0.08	0.184	0.402	< 0.08	0.111	80.0 ×	0.122	1.37		
42818-298 TM4-1-811-PNA	MSD	× 0.08	80.0 V	> 0.08	× 0.08	× 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	> 0.08	× 0.08	80.0 v	> 0.08	80.0	800	A 0.08
42818-298 TM4-1-811-FL	£	8 0.0 ×	< 0.08	× 0.08	× 0.08	× 0.08	< 0.08	0.184	< 0.08	0.244	0.399	0.134	0.392	89:	0.214		0.118	× 0.08
42818-298 TM4-1-811-FL	QSM	× 0.08	× 0.08	× 0.08	< 0.08	< 0.08	< 0.08	< 0.08	> 0.08	× 0.08	> 0.08	A 0.08	× 0.08	80.0	80.0 V	80.0 V	80	A0 0 >
42816-313 TM2-G-813-PNA	8	< 17	CI >	CI >	< 17	< 17	< 17	11>	< 17	¢ 17	¢1.>	< 17	V 17		× 12			< 17
42818-313 TM2-G-813-PNA	MSD	< 17	, ,	× 17	< 17	< 17	< 17	< 17	< 17	1 × 12	11 ×	< 17	71 >	~ 17		1		
42818-313 TM2-G-813-FL	£	< 17	11 >	71 >	< 17	< 17	<i>u</i> >	< 17	< 17	<i>1</i> 1 >	< 17	¢1.>	¢1.>	z				
42818-313 TM2-G-813-FL	MSD	< 17	× 17	× 17	< 17	< 17	< 17	< 17	< 17	< 17	< 17	< 17	< 17	71 >	~ II	< 17		

Raw Data Appendices

ABC Study #42818R

Some of the records that appear in this raw data appendix have been provided as photocopies of original records on file at ABC. This has been done by necessity for certain data that are used commonly in several studies at ABC. Such records include compound receipt records, preparation of stock standards, and dilutions.

The following data correction symbols may appear in the raw data section of this report:

C Calculation error

E Entry error

S Spelling error

D Dating error

R Recording error

F Form change

T Transcription error

I Insertion

Obser	vations and/	or Remarks Form
Test Material: Fog Oil		Lab Form No. 72
Sample Type: <u>Varies</u>		ABC Laboratories, Inc.
		7200 E. ABC Lane
ABC Study No.: <u>42818</u>		Columbia, MO 65202-8015
Principal		
Investigator: Kelly V. Davis		
	Comr	ments
The following compounds v	vere weighe	ed to four decimal places on an analytical
balance, MAT ID# 1714-1	45A. Each	compound was weighed into a separate
volumetric flask. A correct	tion for pur	rity was made. The amount weighed, the
purity, the final volume, ar	nd the solve	nt used are listed after each compound.
The nominal concentration	for each sta	undard solution is 1.0 mg/ml.
036.4.1.1.1	(0.1000	
2-Methylquinoline		100%, 100 mL, Iso-Octane)
6-Methylquinoline	(0.1023g,	98%, 100 mL, Iso-Octane)
Biphenyl	(0.1003g,	100%, 100 mL, Diethyl Ether)
2,6-Dimethylnapthalene		99%, 100 mL, Iso-Octane)
1,3-Dimethylnapthalene		96%, 100 mL, Iso-Octane)
1,2-Dimethylnapthalene	(0.1056g,	95%, 100 mL, Iso-Octane)
2,3,5-Trimethylnapthalene Hexadecane		98%, 50.0 mL, Iso-Octane)
		100%, 100 mL, Diethyl Ether)
Fluorene	(0.1020g,	98%, 100 mL, Iso-Octane)
4,4'-Dimethylphene		97%, 100 mL, Iso-Octane)
1-Methylfluorene Phenanthrene		99%, 100 mL, Iso-Octane)
Anthracene		100%, 100 mL, Iso-Octane)
2-Methylphenanthrene		100%, 100 mL, Acetone)
9-Methylanthracene	(0.1030g,	95%, 100 mL, Iso-Octane)
3,6-Dimethylphenanthrene		98%, 100 mL, Iso-Octane)
2-Ethylanthracene		97%, 50.0 mL, Iso-Octane)
9,10-Dimethylanthracene		98%, 100 mL, Iso-Octane)
7,10 Dimentylanunacene	(o. rorog,	99%, 100 mL, Iso-Octane)
Prepared By: Dann Ma	mt	Date: Zo To Qi
		Date. 221/7 16
Checked By: WOOLY (teers	Date: 30 Jan 96 Date: 30 Jan 96

Observations and/	or Remarks Form
Test Material: Fog Oil	Lab Form No. 72
Sample Type: <u>Varies</u>	ABC Laboratories, Inc.
	7200 E. ABC Lane
ABC Study No.: <u>42818</u>	Columbia, MO 65202-8015
Principal	·
Investigator: Kelly V. Davis	
_Com	ments
The 50.0 μ g/ml standard (std. mix A) aliquot from each of the 1.0 mg/ml standard below and adding them to a sing 10.0 μ g/ml standard (std. mix B) was from each of the 1.0 mg/ml standard below and adding them to a single 100 solvent in each flask was Iso-Octane. refrigerator.	andard solutions of the compounds gle 100-mL volumetric flask. The prepared by taking a 1.0 mL aliquot solutions of the compounds listed 0-mL volumetric flask. The dilution These standards were stored in a
2-Methyquinolin 6-Methylquinolir	
Biphenyl	
2,6-Dimethylnap	
1,3-Dimethylnap 1,2-Dimethylnap	
2,3,5-Trimethylr	
Hexadecane	
Fluorene	
4,4'-Dimethylbir	•
1-Methylfluorene Phenanthrene	,
Anthracene	
2-Methylphenant	hrene
9-Methylanthrace	
3,6-Dimethylphe	
2-Ethylanthracen 9,10-Dimethylan	
,10-Dimension	unacenc
Prepared By: Joan Drant	Date: 30. Jan 96_
Checked By: $\frac{1}{2}$	Date: 30 Jan 96

	PREPARAT	PREPARATION OF FINAL WORKING STANDARD SOLUTIONS	DRKING STANDA	RD SOLUTION	S	
Compound(s) Vories			Primary Std. #(s)	(s) A A		
Solution Number 1.	Parent Solution Number A	Conc. of Parent Solution So. O. Um	Aliquot Volume (mL) IO.O	Dilution Volume (mL)	Dilution Solvent	[] [] [] []
, D	A		2,60			
m m	A L	A C	00 -			0.50 Jan
S. 6	A	50.0 mg	30.0		Acetone	@ w 0.01
6. H	4	->	8			Mmy
7. II	<i>b</i> 0	10.0 m	1.00	\rightarrow	-	0.10 0 ml
8.						
9.						
11. This dilution was added on 31 Aug 95, the expiration date is still 38 Aug 8. Jug 95	s added on	31Aug 95,+1	ha expiration	date is		JCG 31 Aug 95
12.						,
Comments: OE JCG 20 Aug 95	5000			Dilut H &	Dilution Solvent	Lot Number SAT SA
Dilutions by:	Shant	Date	Date: 2 20 Aug 9	M	Storage Condition/and Location:	13K 3946 And Location:
Checked by: 7600, 7.	Souri	Date:	30 Jan	200		C C C C C C C C C C C C C C C C C C C
365	بسط	Date	Date: 30 5an 9	4 6 Expir	Expiration: \$ 136/94	91
ABC Laboratories Inc. Form /AC-13 (04-06-94)						

PREPARATI	ION OF CONCE	NTRATED S	TOCK STAN	IDARDS	
No.: <u>16198</u> Corr	npound: Hexa	-chloroptha	ne_		
Primary Standard No.:	NA Los	No.: <u>06203</u>	iHF	Purity:	99%
Final Gross Wt.: <u>65</u> 8	9917_g	Dilution Volu	me:	100	ml
Tare Wt.: <u>65</u>	18700 9	Dilution Solve	ent: <u>i- ocł</u>	ne	
Net Wt.: 🗢, ۱	<u>a17</u> g	Concentrati	on: <u>/.20</u>	mg lm L	
Adj. Net Wt.: \θC	<u> </u>				
Balance Check	Material	I.D. No.: 17	14-145A	**	
Class S. Weight Added	Before Standard Wei	After ghing Standa	ard Weighin	9	
<u>/00 </u> 9	100,0015	_/00.	our g		
<u>/00 g + 0./ g</u>	100.1016 g	100	1014 9		
<u>2</u> 9	g	1.9	999_ g		
<u>O.1</u> g	O. 1001 g	0.0	<u>999</u> g		
	Solution	Information	THIS IS AN	EXACT COPY O	3
Expiration Date: 8-31-9	6			3 0 1996	
Storage Instructions: o	١-6°		JAN	3 0 1990	
Storage Unit Material C	ontrol Number	•	BY Jann	Grant	
Comments: 心① K办 8-	21-75 @ Three	significant f		used in cele	ulations
purational only 2					
30-96	•	•		-	
Prepared by: 1/2002 1/2.	O-us		Date:	821969	5
Checked by: Joann			Date:	30 Jan 91	0

		PREPARATION OF FINAL WORKING STANDARD SOLUTIONS	RKING STANDA	RD SOLUTIONS		
Compound(s) Hexachkroothane			Primary Std. #(s)	(s) A A		
Solution Number	Parent Solution Number	Conc. of Parent Solution	Aliquot Volume (mL)	Dilution Volume (mL)	Dilution Solvent	Final Conc.
1. 14198 SP"	14198	1000by	83.0	8	in-octane	1000 englad
2. "B"	. A	7000/	00%			10.0 Mg m L
3	΄Β'.	0.0/	00/			0.700
4 . ∵	\rightarrow	<i>→</i>	0.500			0.0500 11.8 /11.1
S	: ر	0.100	10.0	\rightarrow	7	O.Olco no Inc
6.	يود					0
7.						
8.						
9.						
10.						
11.					-	
12.						
Comments:				Dilution So	Dilution Solvent	Lot Number
Dilutions by: 2600, 2	Guri	Date	Date: 21/4 ug 95		Storage Condition/and Location:	Cocation:
Checked by: Charme LA	twa	Date	Date: 30 Jan 96))))	
Approved by: 7600, 7.	Dack	Date	Date: 30 Jan 96	6 Expiration:	tion: 8/3/19c	2
 ABC Laboratorica Inc.						

	>	PREPARAT	PREPARATION OF FINAL WORKING STANDARD SOLUTIONS	ORKING STANDA	RD SOLUTIONS		
Č	Compound(s) Hexachloroethane	ethane		Primary Std. #(s)	s) NA		
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Solution Number 1. 11e.193 'E" 2. "G" 3. "H" 4. "H" 5. 11e.193 "I" 6. "J" 7. "K" 7. "K" 1. "L" 9. "L" 1. "L" 1. "L" 1. "L" 1. "L" 2. "E Xe as sup 95 2. "E Xe as sup 95		Conc. of Parent Solution 10.0 and miles 0.005 miles 0.005 miles 0.005 miles	Aliquot Volume (mL) 5.00 1.00 0.100 0.300 0.900 10.0	1 > 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dilution Solvent Refore	6.500 ml 0.500 ml 0.100 mlml 0.000 mlml 0.000 mlml 0.000 mlml 0.000 mlml 0.000 mlml 0.000 mlml
	Comments: 47 his divintion was added still as Awy 96. 306.		on 38sap 45, the expiration date is 38 Sap 45	piration date i	11	Dilution Solvent	Lot Number RISO4
2818R 98	Dilutions by: 76 02, 7	Deant	Date:	Date: 1351095		one Condition/and I	Storage Condition/and Location: Refrigerede MATID: 1625-635
Appi	Approved by: 7600g X	d have	Date:	30 704 96	6. Expiration:	ion: 8/Э1/94	اره

42818

CHAIN-OF-CUSTODY FORM

Laboratories, Inc. 7200 E. ABC Laue, Columbia, MO 65202 Tel: 314/474-8579 Faz: 314/443-9033

A Division of

RUSH JOB	CUSTO	MER INF	CUSTOMER INFORMATION	RRPC	REPORT INFORMATION	NOL	₹	REQUESTED ANALYSES	ANALY	SES
ABC/Pan-Ag Labs Job #:	Customer Name: Made	me: Mad	lej - 3D/ Environmental	Re	ention:			g		
	Address:	181 Nee	Pood	Project, P.O. #:	J. #:			57		
Date Entered on LIMS:	City, State, Zip: Circinnati,	P. Cincing	wh. OH 45669	Project Name:	ne:		х	skr		
	Phone:	513 922	8199	Project Manager:	hager:	-	BIE	EL M		
		513 922	22 9150	Copy To:			/SVE			-
Lab Sample I.D.#	Date	Time	pler:)-H¶	HeTI Po		
	Sampled	Sampled	Client Sample Description	tion	Location/Depth	P. Soil, L. Liquid NO. Of Containers		رم		
X	81895	2100	bat + insects + feus	+ 16.05		4				
No	-									
	,									
							1			
Turnaround Time:		Comments:					1	ARE SAMPLES:	4	PRESERVATIVE:
Standard Turnaround	round	Samples	iks recieved	Frozen	براه که	J. P		TOXIC		NOH ICE
(10 Working Days)		Store	A 8-15-C	33-01-8	- 30:01	778 8-10-55	<u>ل</u>	PLAMMABLE?	are?	H2SO4
(TPH, LUFT Samples - 5 Days)	Days)							EXPLOSIVE?	.E.	HNO3
Rush 5 Day					•			HIGHLEVELS	ELS?	HCI
Rush 3 Day							·	İ		ASCORBIC ACID
Rush 2 Day							<u> </u>	FOR CAM METALS		
							- T	316	3	
	Sign	Signature	1	Date	Time	Printed Name	Name		ర్	Company Name
Relinquished By:	17	Mach	> 8/9	9 195	11:00 @pm	Robert E.	Made	le;	3D/E,	Eminoranalal
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Relinquished By:	-				md me	\				
Received By:					6d 68					
Received for Laboratory By:					80					
P	ENC	RSLI	ABO DR C ENTS	TS	ND.	ATIC	1150	A I I	NITE	Oa

ABC Laboratories, IR.				
	SAM	IPLE RECEI	T FORM	
Study No.:	42818			
Client: <i>30</i>	Environmental			
Analysis:fo	90.1			
Principal Analyt	ical Investigator:	Tim Sp.	storag	e Location: B-15-C
Received From:				Storage: 10:00 8:40-98
Method of Trans	sportation: fed Ex	Date Shippe	ed: <u>8-9-95</u> Da	ate Received: 8-10-95
		Date		
Sample ID	Matrix	Sampled	Weight	Comments
TI-W-1	insects	8-8-95		samples rect frazen
17-8-1	iusect5	8-8-45	_	on dry ice - stored
TI4-8-4-	insects	8-8-15		B-15-C - TTB 8-10-95
TI4 - W	insects	8-8-95	<u> </u>	
3-7M4-G Site 4-2	bat feces	8-8-95	,	
4-3 midnet	insects	8-8-55	-	
TM1-1	but	8-8-95		
w= white	light			
T			THIS:	IS AN EXACT COPY OF
			HI=C	TOWN DODGEN
				# 2 IS95
				14.10
			<u> </u>	MIP
Prepared by:	rimothy J.	Rucks		Date: 8-10-95
Checked by: \triangle		~ ~ ! F J		Date: \$21-55
•	Marcha S	Per all		Date: 8-21-95
Form #ACFS-22 (07/20/95)	- ywana V)		Date. 0 - 0/-/3

A Division of Laboratories, Inc.
7200 E. ABC Lane, Columble, MO 65202
Tel: 314/474-8579 Fax: 314/443-9033

	RUSH JOB	CHETC	INI GAMC	NOTE T M GOUNT AND MOUNTY		MIND I TOWN						
L			NI WELL	4	KKP	REPORT INFORMATION	TION		REOU	REQUESTED ANALYSES	ALYSES	
-	ABC/Pan-Ag Labs Job #:	Customer N Address:	Customer Name: Made		30 Environmental Report Attention: Angela Schmical	tention: Angela	Schmid	+		\$7		·
<u> </u>	Date Entered on LIMS;	City, State,	City, State, Zip: Circi n.O.	notion Of	H 45233 Project Name: Fee C.	ame: RaQ! F	Et McCollan	100		rs hjë		
		Phone: 5	Phone: 513 922 8	6	Project Manager:	1			EL JEX	Jio NA		
	•	Fax #: 5	513 922	2 9150	Copy To:	Analo Schmia	haidt		YSVE	مرا ا		
	Lab Sample I.D.#	Date	Time	Sampler:		9	Sample Type			אלים לי		
		Sampled	Sampled	Client Samp	Client Sample Description	Location/Depth	9- Soil, L. Liquid 0 - Other	No. of Containers		ig ig		
L L		8998	2400	bats, ins	insects		0	20				
10												
JSE											-	
BL												
۲V												
									1			
15	Furnaround Time:		Common									$\overline{\parallel}$
	X Standard Turnaround	around	Screen Dies	79.	Forzen An	ما من ما	share 1		ARES	ARE SAMPLES: NA	PRB	
_	(10 Working Days)		8-11-4:21c	Modu		12 B-15-C	0-17.9			TOXIC?		3
<u>~</u>	(TPH, LUFT Samples - 5 Days)	(Days)		_		778	8.15-94			EXPLOSIVE?	HNO	
	Rush 5 Day									HIGHLEVELS?	HCI	
<u> </u>	Kush 3 Day										ASCORBIC ACID	IC ACID
1 1	Rush 1 Day								POR	FOR CAM METALS:	TTLC	
		Sig	Signature		3	Ė						T
<u> a</u>	Belingwiched B	1	1		Dalle Co. L. C.	Lime		Printed Name	و		Company Name	-
<u>: 6</u>	į V	3-	3	7	8/10/42	1100 @ 011	Kobact	F. Mod	de	31	3D/Enricenmen	2
د ا د	Deliver by: Chino	1	Dark B		8-11-82	md @ 00:01	Timothy	4	Bucks	41	3c cabs	
41 4	Actual of the control					Ed Es		,				
<u>* </u>	Keceived By:					md me						<u>-</u> .
×	Received for Laboratory By:					6d E						
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	SAM	IPLE RECEIF	T FORM	
Study No.: 4	2818			
Client:	Environ mental			
Analysis:fc_c	o. 1			
Principal Analytic	cal Investigator:	Tim Spurg	Storag	e Location: β -15= ϵ
Received From:	30 Environ 1	1ental	Date/Time of S	Storage:
Method of Transp	portation: <u>fed &x</u>	Date Shippe	d: <u>8-10-95</u> D	ate Received: 8-11-95
Sample ID	Matrix	Date Sampled	Weight	Comments
TI-1-2 met	insects	8-9-95	-	Samples reid call
TI2-W-Z		8-9-15	1	frozen on dry ice
TI1-8-2		8-9-95	-	stored on B-A-Asile
TI4- 1 Net		8-9-95	-	upon rec't
TI4-8X2		8-9-95		
T14-WX2	\bigvee	8-9-95	_	
TM1-2	Bat	8-9-95	_	
Tm4-1	bat	8-10-95	_	
			"THIS"	IS AN EXACT COPY OF
				HEINAL DUCUMENT"
			W 1 - g-1	1 2 1 1705
				Myp
				CE TTB 8-15-45
Prepared by: <u></u>	timothy 4.	Burks		Date: 8-5-85
Checked by: Q	7			Date: 8-21-95
Approved by:	Nartha Po	old_	· · · · · · · · · · · · · · · · · · ·	Date: <u>8-21-95</u>
oran #ACFS-22 (07/20/95)	$\overline{}$			



L	RUSH JOB	CUST	MER IN	CUSTOMBR INFORMATI	ION	RHPO	REPORT INFORMATION	TION		RE	REOUESTED ANALYSES	ANALY	SH
	ABC/Pan-Ag Labs Job #:	Customer N	ате: Въ	Customer Name: Bob Made	3DIE	Report Attention:	Ancela	Schmiolt	+			_	
		Address: 78	184	Neeb	Rd	Project, P.O. #:	64.40	7327 19			57		
<u>н</u>	Date Entered on LIMS:	City, State, Zip: Cincinnal	Zip: Cinc		OH45233		7	DAN TA	W. Clellen		<u>~</u> /		
		Phone: 513	13 922	ď	T.	1	n u	1			יינעל פעל		
	,	14	44		Q	Copy To:	Anorla Schuig	ni dt			4		
	Lab Sample 1.D.#	Date	Time	Sampler:	-		0	Sample Type	,	D-Hq.	7d.	-	
		Sampled	Sampled	Clica	Client Sample Description	uo.	Location/Depth	S. Soll, L. Liquid	Containers		19		
77		810/9S	. ,	124	insects						,		
NO		-		_									
SE (
SU :					-					-			
AB										\vdash			
<u>ן</u> ד										_			
1	-									-			
										-			
										+			
										\vdash			
F .	wnaround Time: Standard Turnaround	round	Comments:	store	אי ש	Walk-in	cef. 166-12	ره ۱۲		¥	ARE SAMPLES: TOXIC! NA		PRESERVATIVE:
	(10 Working Days)		reció.	Sayles	neved to	Freezer	- Baile	8-14-65	35		PLAMMABLE?	الــا ھ	H2SO4
_	(1177, LOF1 Samples -3 Days) Rush 5 Day	(sígr)			-			77.8	8.12.2	1	EXPLOSIVE?		HNO3
	Rush 3 Day									┙	HIGHLEVELS	 الا	HCI
	Rush 2 Day									PC	POR CAM METALS:	ALS:	ASCURBIC ACID
_1	Rush 1 Day										strc	TTC	
1		Sig	Signature		Date	15	Time		Printed Name	١		5	Company Name
æ	Relinquished By: Hole	The state of the s	Wholey	\ \(\zeta\)	11/8	145	(sm (Rober 4	7 +	How	7	20/6	16.11.00
<u> </u>	Received By: Aimothy	7	Buck		8-15	295	3:30 am @ii)	1	hy 7.	Buc	120	186 4	Labs
<u>α </u>	Relinquished By:						Ed 69		_				
∝ !	Received By:						80 60 e						
ĸ	Received for Laboratory By:					- 17	8 6						
	PLEASE CALL	THE NEW	BERS)	ID APOTE	OR	IEST	TATA	THE			1	1.0	

	SAN	MPLE RECEI	PT FORM		
Study No.:	12818				
Client: 30	Environmenta	1			
Analysis: <u>Fos</u> a	ril				
Principal Analyti	cal Investigator: Z	in Spurgeo	<u>~</u> s	torag	ge Location: 8-15-C
Received From:	Any Ag 30	Euvironnent	ADate/Time	e of S	Storage: 10:00 8-5-
Method of Trans	portation: Fed Ex	_ Date Shippe	ed: <u>8-11-95</u>	_ D	Storage: 10:00 8-6-7 ate Received: 8-12-95
Sample ID	Matrix	Date Sampled	Weigh		Comments
TI3-1 (met)	insects	8-10-95			samples stored
TI 3-W-1	insects	8-10-95	-		IN Walk-IN ref. 166-12
TI4-W 810	insects	8-10-55	-		upon recid - moved
TI4-810 net2	iwsects	8-10-95	_		to B-11-Aisle 8-14-93
TI4-810 net3	insects	8-10-95	_		
T13-8-1	insects	8-10-95	-		
TI4-B 810	insects	8-11-95	-		
T-M3-1	bat	8-9-95	-	ΤH	IS" IS AN EXACT COPY OF ORIGINAL "DOCUMENT"
TM3-2	bat	8-10-45	-		AUS 2 1 995
TM4-810-1	bat	8-10-95	_		7.35 2 1000
				8Y_	MAP
				ľ	in Aquatics - moved to
					Sample prep 8-1495-173 8-5-95
					E 718 8-15-45
Prepared by:	inothy 4.	Burks			Date: 8-15-95
Checked by: 🕰	bores Ken				Date: 8-2/-9+
Approved by: 👤	Nartha De	roll			Date: 8-21-95
rm #ACFS-22 (07/20/95) /	· · · · · · · · · · · · · · · · · · ·	<i>)</i>			

A Division of Laboratories, Inc. 7200 E. ABC Lane, Columbia, MO 65202 Pel: 314/474-8579 Fax: 314/443-9033

CHAIN-OF-CUSTODY FORM

	RUSH JOB	CUSTO	MER INF	CUSTOMER INFORMATION	RH	REPORT INFORMATION	ATION		REO	UESTED	REQUESTED ANALYSES	
<u> </u>	ABC/Pan-Ag Labs Job #;	Customer Name: 3	me: 3D/ 8/ No.	Environment of production	Dankta / Report	Report Attention: Argeld Project, P.O. #: (979 22)	2 Schmid	at		icho		
<u> </u>	Date Entered on LIMS:	City, State, Zip:	2) 922		4523	Project Name: Fig. O. (T T	Jeck llar		te an		
<u> </u>		Fax # (513)	3922		Copy T	COPY TO: Arcold Sc	hmidt			100		
	Lab Sample I.D.#	Date	Time	Sampler:		0		No. of	-HTT -HTT	- 10		
		9	Sampled	Client Sample Description	Description	Location/Depth	O - Other	Containers		₹ つ	`	
X		8/CI		stagingly	Ϋ́		0	7100		7		
INC		_		hat's insec	ts S			30(3		1		
EC		8/11		25	eks			æ		7		
SU 8									-			
AB.						-						
7									-			
<u>.</u>									_			
									\vdash			
	Furnaround Time: Standard Turnaround	naround	Comments:	77,00	20 100	1 0 2	Some	ter	AR	ARB SAMPLES: AA		PRESERVATIVE:
	(10 Working Days)		Γ'	mole jaces	- Stored	8-15-6	8-15-95		L	PLAMMABLE?		H2SO4
	(TPH, LUFT Samples - 5 Days)	S Days)			6 TTB 8-15-95	1	118 4-15-65	.4S		EXPLOSIVE		HNO3
AR	Rush 5 Day									HIGH LEVELS?		HCI
 C 42	Rush 3 Day								i		<u> </u>	ASCORBIC ACID
818R	Rush 1 Day								€	STLC STLC	TTLC	}
PG		Sig	Signature		Date	Time		Printed Name	١		Compan	v Name
99	Relinquished By: D	F	25/26	5	14 Awayst 95	20	A MY	die de	3		3D/ENVIEDUNTAL	NATAL
	Received By: (MO)	AA	Bucks		8-15-95	10:00 @pm.	m Timoth	1- B	165		ABC 1265	65
	Relinquished By:	\supset				Ed Es	ε					
	Received By:					60 68	6					
	Received for Laboratory By:					6d E	6					
	PECA	KE N	RSI	D ABOTTOR (C	(ENT	CN	TATIONS	THANK TOUR	G71 G	IR CONTI	TOU FOR TOUR CONTINUED BATRONICE	1105

	SAM	IPLE RECEIF	T FORM	
Study No.: 47	2818			
Client:	Environmente	<u>~ </u>		
Analysis: _foq	oil			
		Tim Spuc	geon Storag	ge Location: B-15-C
			•	Storage: 11:00 8-15-95
Method of Transp	portation: Fed Ex	Date Shippe	d: <u>4'-14-95</u> D	ate Received: 8-15-95
Sample ID	Matrix	Date Sampled	Weight	Comments
取-1 (net)	insects	8-12-95	-	samples rec'd ceid
TI2 - 6-1	insects	8-12-95	•	on wet ice - some
riz - w-1	;	8-12-95		water in sample
TI2- W-2		8-13-55	1	iars
TI3 - 2		8-11-95		
TI3-B-2		8-11-95	-	
7エ3 - W - ス		8-11-95		
TI2-8-2	V	8-13-95	_	
TI4-8 812	insects	8-110 95	- THIS	IS AN EXACT COPY OF RIGINAL "DOCUMENT"
TI4-B 813		8-13-95	-	2 1 1005
TI4-W812		8-13-95	_ ;	
714-6813	1	8-14-95	- 1	me
TIY -Net4 - 811		8-11-95		
TI4-Ne+5-811		8-11-95	_	
TI5-Net -812	J	8-13-85	_	
				O TIB 8-5-95
Prepared by:	Timothy 4.	Burks		Date: 8-15-45
	loreller			Date: 8-21-91-
_	Martha Ge	relo		Date: 8-21-95
orm #ACFS-22 (07/20/95)		}		

ABC Laboratories, Inc.				
		PLE RECEIP	T FORM	
Study No.: 4	2818			
Client:	Environmental			
Analysis: <u>fog</u>	0.1			
Principal Analyti	cal Investigator: <u>1</u>	in Spurge	Storag	e Location: 8-15-C
Received From:	30 ENVIONMEN	tal	Date/Time of S	Storage: 11:00 8-15-95
Method of Trans	portation: Fed Ex	Date Shippe	d: <u>8-14-95</u> Da	ate Received: 8-15-95
		Date		
Sample ID	Matrix	Sampled	Weight	Comments
TM2-1	Bat	8-12-95		samples rec'd cold
TM 2-1	bat	8-13-95	-	on wet ice-some
Tm2-2	bat	8-12-95	-	water in sample
TM2-3	bat	8-12-95		iars
TM2-4 =	bat	8-12-95		
TM2-11	bat	8-12-95	_	
TM2-6-3	but feces	8-13-95	_	
Tn 2-6-4	but feces	8-13-95	-	
7M2-G-7	but feces	8-12-95		
Tm2-6-8	bat feces	8-12-15	17	HIST IS ATTEMATICAL COPY OF
Tm2-6-9	but feces	8-4-95	- "	EUN 31. I
TM2-G-14	but feces	8-12-15	1	AUG 2 1 1995
TM2-G-15	but feces	8-12-95	-	mip
Tm3 -6	bat	8-11-95	184	The state of the s
TM4-1-812	bat	8-12-95	_	
TM4-1-813	bat	8-13-45		
	Tinothy L. But	-ks		Date: 8-15-95
1	closed Key			Date: 8 2/-55
	March Der	el		Date: 8-21-95
Form #ACFS-22 (07/20/95)	<i>(</i>			

	SAM	PLE RECEIP	Γ FORM	
Study No.:	42818			
Client: 30	Eusironmental			
Analysis: <u>foq</u>	oil			
Principal Analytic	cal Investigator: 🗹	Tim Spurgeo	ير Storage	e Location: <u>B-15-C</u>
Received From:	30 Euriconmen	tal	Date/Time of S	Storage: 11:00 8-15-95
Method of Transp	portation: Fed Ex	Date Shipped	l: <u>8-14-95</u> Da	te Received: 8-15-95
Sample ID	Matrix	Date Sampled	Weight	Comments
TM4-2-813	bat	8-13-95		Samples reid wid
TM4-3-813	bat	8-14-95	_	on wet ice-some
TM2-5	bat	8-12-95	_	water in sample jus
Tm4-1-811	bat	8-11-95	_	
Ste 4 Blackligh	insects	8-11-95	-	774-8-811
site 4 white ligh		8-11-95	_	774-W-811
			·	T GOES ON EXACT COPY OF
			:	A462 1 1505
				WWP
Prepared by:	Timothy 4. Bo	urks		Date: 8-15-45
Prepared by: Checked by:	force Kers			Date: 8-2/-55
Approved by: 💢		ald		Date: 8-21-95
orm #ACFS-22 (07/20/95)) 		

7200 E. ABC Lane, Columbia, MO 65203 Tel: 314/474-8579 Fax: 314/443-9033 Laboratories, Inc. A Division of

	П	CUSTC	CUSTOMER INFORMA	FORMATION	-	REPORT INFORMATION	TION	Z	REQUESTED ANALYSES	DANALY	SES	ŀ
	ABC/Pan-Ag Labs Job #: (Customer Name:	M 4	D/Covingonenta	J	Report Attention: 1/122	Aiselo xhmd		rich			
	Date Entered on LIMS:	City, State, Zip:	9	11 JA 10	15233 Project	45233 Project Names—US U. 1	IT MCCIPIUM		ne k	1		
		Fax #: 151	4/ I		Copy To	Copy To: Ply W (G > 1 M) 1	hmidt-	8/SV5	2) (2) (85310	. 1		
	Lab Sample I.D.#	Date	Time	Sampler:				_				
		Sampled	Sampled	Client Sample Description)escription		8-Seil, L. Liquid No. Of			- -		
X٦		56/8/51		Surface water	aler	151162			7			
INC	ARCON TO NORTH		•									
EC										_		Τ
SN												
a A												
7						Į.						
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	Turparound Time:		Comments:	7					ARE SAMPLES:	š	PRESERVATIVE:	
	Standard Turnaround	nonuq	311	2-10 Ch	when			. (TOXIC?	とと	HO*N	
	(10 Working Days)		all	Some O	old on	. weter	J. Stark	7	PLAMMABLE?	BLE?	H2SO4	
٥	(TPH, LUFT Samples - 5 Days)	Days)	1	Crigal ter	7 7	Quigor	0470		EXPLOSIVE?	VE?	HNO3	
Rr.	Rush 3 Day	·	\	7				- T	HIOHLRVELS?	VELS?	ASCORBIC ACID	19
49D1	Rush 2 Day						-		FOR CAM METALS	ETALS:	X (2)	
מס	Rush 1 Day	·							STLC	TTC		
ם								-				
c 0		2	Op 10 of		Date Control	Lime	Printe	Printed Name		8 1	Company Name	
ממו	Keinduisped By:	が変	77.7		DHUGHISI		ALLY COS	per		30/1	SD/F-DVIIIOMBM1.	키
AO	Received By: W. 111. 77	d H	rell		170mg.95	md(m) (70, 01)	March	trock		ABC	Lelis	1
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	الک					nd me						
	DI GACE CALL TUE MIM DEDCT	TUE NIM	DEDC! ICH	ED ABOVE FOR CON	W4110 04114							ı

	SAN	MPLE RECEIP	T FORM	
Study No.: 422	818			
Client: $3D/9$	nulasnocal	tal		
Analysis: Fog	Dr (
	cal Investigator: _			
				Storage: 1864 95 12:30 Pm
Method of Trans	portation: Fed Ex	_ Date Shippe	d: 16 aug 8 D	ate Received: 17 Quy 95
Sample ID	Matrix	Date Sampled	Weight	Comments
SW2-1	Water	15au 95	NIA	Call on unties
Sw 2-dup1	water	15 aug 95	-	
SW2-2	Water	15 Aug 95		
SW2-3	Water	15 aug 95		
Sw2-4	Water	15 aug 95		" IS AN EXACT COPY OF
SW 2-5	Water	15 aug 95	·	UNIGINAL DOPONIENT
SW2-6	Water	15 aug 95		AUG 2 1 775
SW2-7	Water	15 aug 95	- / ! L	mip
Sw3-8	Water	15 aug 95		1000
SW2-9	Water	15 aug 95		
SW2-10	Water	15 Rug 95		Broken
		ď		
				Storedo
	(IE) Not	18 aug 9	5 (200 m	48.01-95
Prepared by:	1	old 0		Date: 18/20195
Checked by:	Sorie B	allen	<u> </u>	Date: 21 Aug 95
Approved by:	Partha G	Perall		Date: 2/aug 95

ABC 42818R P6 00043

A Division of Laboratories, Inc. 7200 E. ABC Law, Columbia, MO 65203 Thi 314/44-8579 Faz: 314/443-9033

CHAIN-OF-CUSTODY FORM

	RUSH JOB	CUSTO	MER IN	CUSTOMER INFORMATION	a Ha	REPORTINEORMATION	NOIL		PHOHE	CTED A	SUSA TANA CUTPRITOR A	٠.
Ţ.,									NEX OF		NAL I SE	
	ABC/Pan-Ag Labs Job #:	Customer Name:	1	ENVITONMENTAL	Report A	Report Attention: Hrap lo SCI	_ 1	made	()			
		Address: 18	. 1	NEED JUDG	Project, P.O. #:	0.#: 0777	7			-1		
	Date Entered on LIMS:	City, State, Zip: (1) (1) (1)	ip: CL X	wint of 45	73 Project Name: 1-15	ame: 1-15, 10, 1	11 N	NOCO (PON	10.4]	/T:		
		Phone: 5,3	3) 92	12-8199	Project Manager:	anager:				<u>.</u> (
		Fax # 5	3)9	22-9150	Copy To: AM	Aralk S	C limed	<u>.</u>	I (500		
	Lab Sample 1.D.#	Date	Time	Sampler:		ר כנ	Sample Type	匚		·* (
		Sampled	Sampled	Client Sample Description	tion	I ocation/Denth	S. Soil, L. Liquid	No. of		7		
λT	,	8/14/5	1730	£.		5110 ¢	4.5.40	-	7			
NC		8/15/93		t _i Six		カシら	فالاربا	0)	7			
E		5/11/18	494712	1.51 1.51 1.51		A 5 8	4	N	7			
SN												
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•			2		カック				*			
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_					7							
										<u> </u>		
					-				-			
	Turnsround Time:		Comments:						ARRAM	APR SAMPING (]_	PRESERVATIVE.
-	Standard Turnaround	round	11760	Dak of Silc	4007	: 25 2a			Toxic	֝֞֝֝֞֝֓֞֝֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓		HOW HOW
•	(10 Working Days)		prair	1 50	ا ا ا	349 40			\	FLAMMABLE?		H2SO4
	(TPH, LUFT Samples - 5 Days)	Days)	7	गड इस्प्रेट्स	3 9.06	(OC3	59		axa	EXPLOSIVE?		HNO3
AB(Rush 5 Day			7			7		HIG	HIGH LEVELS?		КI
3 4	Rush 3 Day											ASCORBIC ACID
281	Rush 2 Day		, , , , , , , , , , , , , , , , , , ,	1 1 0	1404		1		FOR CA	POR CAM METALS	× r	die 16
8R	Kush I Day		129	Dur. 05 11. 18.	Lalcolex	in the line	10-0-		STLC	3	TTC)
P6		รัธ	Signature	E	Offic	Time		Printed Name		ŀ		N.
88	Relinquished By: AMI/	として		1011	N. Kalle, F.	10,000	, 40 V	0.7		7	r	_
1044	Received By: Make	de C	Luci	0170	017aug	ma(m) (4,0)	7	れた	7	10	ナクタ	NAME OF THE PARTY
	Relinquished By:		0		0	Ed Es	/	I	b			
-	Reseived By:					E						
	Received for Laboratory By:	9				80				-		
	PLEASE CALL THE NIMBERS : JETT	TUE NI DA	Ponc I lett									

14

	SAM	PLE RECEIP	T FORM	
Study No.: 4	2818			
Client: <u>30/8</u>	nviornment	al		
Analysis: Jog	Oil			
Principal Analyti	cal Investigator: 上	elly Van	Storage	e Location: B-/3-I
Received From:	3D/Enviorn	mental	Date/Time of S	Storage: 8-4 4035PA
Method of Trans	portation: Fed Y	Date Shipped	d: 16aug 95 Da	te Received: 17aug 85
		Date		
Sample ID	Matrix サチバン	Sampled	Weight	Comments
TF 3-2	fish	15 aug 95	NIA	Pec'd anderet
TF 3-3	17/2 feel	15 aug 5	NA	No In.
TF 3-4	1712 fish	15 aug 95		Stored B-aisle
TF 3-5	1712 fish	15au 95		upon receipt.
TF 3-1		15 aug 95		U
TF 2-1	1330 Lish	15 aug 95		
TF 2-2	1330 find	15 aug 5		
TF 2-3	11/2	15 Quy 95		
TF2-4	1338 Lisk	15 aug 95		The second secon
TF 2-5	1330 List	15 aug =	7	A CONTROL OF DOCUMENT
TF2-6	1330 Lesk	15 aug 55		AUG 2 1 1505
TF 4-1	Lisk 1730	14 aug 95		440-
TF2-1	Mish	15am 95		ml
	0	0		
(DE) MAP 18' Prepared by:	Jartha Pra	el		Date: 18 aug 95
	charekken			Date: Alling 95- Date: Alang 55-
Approved by:		Peroll		Date: 2/Qua 95
Form #ACFS-22 (07/20/95)	7	7		

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A Division of Laboratories, Inc.
7200 E. ABC Lane, Columbia, MO 65203
Tel: 314/474-8579 Faz: 314/443-9033

	act using	i e i e			15003-J	CHAIN-OF-COSTODI FORM	IM.					
	MOSH JOB	20310	MEKIN	CUSTOMER INFORMATION	REPOR	REPORT INFORMATION	NOL		REQUESTED ANALYSES	DANAL	YSES	ļ
	ABC/Pen-Ag Labs Job #:	Customer Name:	ime: 3D	(CAIVIN ON MENTAL	Report Attention:	tion: Angela	piwiz i)	(n			
		Address: 78	811100	eblad	Project, P.O. #: ()	1	7		chi) =	
	Date Entered on LIMS:	= !'	C	Deiner F. 01 45233	Project Name (-17.	Live DIV	1 NOCE	√\ <i>\\</i>				
		Phone: (5	513)912		Project Manager:	ger:			135 135			_
	,	Fax #: (C)	39	2-9150	Copy To: f	F110019	6 MA 2011-			 		
	Lab Sample I.D.#	Date	Time	Sampler:			_		-на -на			
		Sampled	Sampled	Client Sample Description		Location/Depth	Fish, Cupra	No. of Containers		-		
XT.	-	4491		UP GRETO TION / LANK		0.77	┢	10	1			
INC		56/8/11		J. NOW	à	1		-	7			1
E												Τ
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Ψ												Ĭ
7					×							
					1	i.	1					
												Τ
-												Τ
											1	Τ
					2						12,	Τ
-	Twantound Time:		Comments:						ARE SAMPLES:	_	PRESERVATIVE	Τ.,
	Standard Turnaround	around	B	id on wet a	. 37				TOXIC	5	HOW	
	(10 Working Days)								PLAMMABLE?	BLE?	H2SO4	
A		- S Days)			-				EXPLOSIVE?	E)	HNO3	
BC	Rush 5 Day								HIGHLEVELS?	TELS?	₽ 7(
428	Rush 3 Day										ASCORBIC ACID	G
18R	Rush 1 Day								FOR CAM METALS:		ב ה	
¢ }									71.	:]	22	
96 E		Sig	Signature	Date		Time	ä	Printed Name			Company Name	Т
1004	Relinquished By: / M.	6.90	6	13/011	195 6	.3). ⊕ pm	/w/	J. Y. 1-7	/ ¿X	XX	NV BINNINI	<
£	Received By: Mart	# (J	200	18,000	180 /1	10; 30 (m) pm	Martho	7	8).	A	o Lote	
•	Relinquished By:	•	2)		84		0				
	Received By:					und exe		-				
	Received for Laboratory Byn					19 G 18 G						Π
١	PLEASE CALL THE NUMBERS LISTED ABOVE	THE NUM	BERS LISTE	ED ABOVE EOR COMMENTS OLIFSTIONS AND OLIOTATIONS THANK VOLLEOR VOLLE CONTINUED BATRONAGE	OLIFSTION	TATOLIO GIA	TONG TUANI	VOLLED	TYON GIVON G		40000	1

ABC Laboratories, Inc.				
	SAN	APLE RECEIP	T FORM	
Study No.: <u>42</u>	818			
Client: <u>3 6 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ </u>	Envisamen	tel		
Analysis: Log	Oil			
Principal Analyti	ical Investigator:	Kelly Love	Storag	Lecation: B-13-I Redement triping. D
		. ~		Storage: 8-18-954:00
	A			ate Received: 17 aug 95
		Date		
Sample ID	Matrix	Sampled	Weight	Comments
710-1	Cerys.	15 aug 95	NIA	Peridon vitie
TV2-2	Barok + Reena	15 au 95	-	Stored Braisle
TV2-3	Bark's leaner	15 aug	_	uson servit
TV3-1	Bark & Lcanso	15 aug 90	- \.	0
tra-a	Bark & Leave	15 aug 95	-	
TV3-3	Bark & Leane	15 aug	_	
502-1	Sediment	15 aug 85	-	
502-Dup-1	Sedement	15 aug 8		
302-2	Sediment	15 aug 8		3 2 1 1835
⁸ 02-3	Sediment	15 Rug 95		
SD2-4	Sedement	15 Aug 95	3)	nul
SD2-5	0 0 -	15 aug 95		
502-6	Sediment	15 aug 95		
SD2-7	Sedement	15 au 95		
SD2-8	Sedement	15 aug 85		
SD 2-10	Sedement	15 alig 95	V	
Prepared by:	Justa Final	gur 8-18.	-95	Date: 18 aug 95
Checked by: 24	tosellen			Date: 2/Cunso
Approved by:	partha &	zoed		Date: 18 aug 95 Date: 2/Queg 95
orm #ACFS-22 (07/20/95)) 		

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CHAIN-OF-CUSTODY FORM

\

ABC 42818R P6 00048

	SAN	MPLE RECEIP	T FORM		
Study No.: 43	1818				
Client: 3	Enviornm	ental		- 	
Analysis: Jog	Oil				
Principal Analyti	cal Investigator: _	Kelly Was	ves_s	Storag	e Location:
Received From:	30/Envior	amoutel_	Date/Tim	e of S	Storage: 18/14 95 12130
Method of Trans	portation: Fed Ex	Date Shippe	d: 17au 95		ate Received: 18 Guy 85
	/	Date	Û		
Sample ID	Matrix	Sampled	Weigh	t	Comments
SU1-2	Soil	8/16/95	NA		Cool in water
541-Dup-2	Sail	8/16/95			no ice
543-2	Soil	8/16/95			frankining
843-3	Sail	8/16/95			7
843-6	Soil	8/16/85			
5B1-a	Soil	8/16/95	-		
582-2	Soil	8/16/95			
503-5	Soil	8/16/95			
541-3	Sail	8/16/95			2 ***
Sm1-a	Soil	8/16/95			
Sm1-4	Sail	8/16/95	-		2 1805
5m1-5	Soil	8/16/95	-	:	
Sm 2-2	loil	8/16/95	-	7.2	MAR
5m3-Dup-1	Sail	8/16/95	-		
Sm 3-5	Soil	8/16/95	j		
SM 3-6	Sail	8/16/95	U		
Prepared by:	arthu Per	ald ald	Fed Ef.	talia	Date: 18 aug 95
Checked by: 🗘	.)				Date: 18 aug 95 Date: 2/aug 95 Date: 2/aug 95
Approved by: $\frac{C}{2}$	Martha D	esold			Date: 2/aug 95

Study No.: 42818	
Client: 30 Envernmente	
Analysis: For Oil	
Principal Analytical Investigator: Kelly Dones Storage Location: D	
Received From: 30 Environmental Date/Time of Storage: 18leug 95 12:00	7
Received From: 30 Environmental Date/Time of Storage: 18aug 95 12; p. Method of Transportation: Lef Date Shipped: 17aug 95 Date Received: 18 Aug 95	
Sample ID Matrix Sampled Weight Comments	
SDI-1 Sedement 16/8/95 NIA Cool in water	
SDI-1 Sedement 16/8/95 NIA Cool in water SDI-2 Sedement 16/8/95 NO ice remaining	
901-3 Sedement 16/8/95	
503-6 Sediment 16/8/95	
SW1-1 water 16/8/95	
3W1-2 Water 16/8/45	
SW1-3 Water 16/8/95	
2 1 iS95	
Date Taken from Feb Ex label MHP 8-18-95	
Prepared by: Marcha Rezald Date: 18 aug 8	
Checked by: Startlun Date: 2/Que55	
Approved by: martha Pezold Date: 2/ang 95	

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CHAIN-OF-CUSTODY FORM

	RUSH JOB	CUSTO	CUSTOMBR INFORMAT	ORMATION	REPORT	REPORT INFORMATION	TION		REQUESTED ANALYSES	ED ANAI	LYSES	
	ABC/Pan-Ag Labs Job #:	Customer Name:	me D/	Environmental	Report Attention:	Ansola	S hmo	dt-		-		Γ
		Address: 7	181 NB	ib Rad	Project, P.O. #:	6778	119		<u></u>	-		í
	Date Entered on LIMS:	City, State, Zip	PCANCINING	6 را	Project Name: 1-00	00 00) . ^C	Υ-		<i>i</i> , (,
		Phone: /6	63393	-819)) 				<u>.</u> {		77
		Fax #: (5)	13)92	0516-ce	COPY TO: AR	Aralla >	> hmat			र्क		. /
: •	Lab Sample I.D.#	Date	Time	Sampler:		2	Sample Type	20 02	о-н е т 1-н е т МГ	٠,		,x'
		Sampled	Sampled	Client Sample Description		Location/Depth	P-Sell, L. Liquid	Containers		<u> </u>		_
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INO		16 Aug		503			V.	1/2	7			T
ΕC		7)	}				T
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	(10 Working Days)	•	Saco	Coal					FLAMMABLE?	WBLE?	H2SO4	Τ
	(TPH, LUFT Samples - 5 Days)	Days)							EXPLOSIVE?	ive?	HNO3	Π
ABO	Rush 5 Day								HIGHLEVELS	EVELS	Ý	T
3 4:	Rush 3 Day]		ASCORBIC ACID	8
2818R	Rush 2 Day Rush 1 Day			And the second second to the second s	* * * * * * * * * * * * * * * * * * *	***************************************	•	and the state of t	FOR CAM MRTALS	(RTALS:	901 X	
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P6 1		Sign	Signature	Date	e,	Time		Printed Name	ne		Company Name	
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51	Received By: Mart	7	e seek	18/4	1 95 10.	10;30 (m)m	Macth	ha fe	erold	AB	C Labor	
	Relinquished By:		0		0	ac po						
	Received By:					md me						
	Received for Laboratory By:					84			***************************************			
	PLEASE CALL	THE NUMB	ERS LISTE	PLEASE CALL THE NUMBERS LISTED ABOVE FOR COMMENTS, QUESTIONS, AND QUOTATIONS, THANK YOUFOR YOUR CONTINUED PATRONAGE	OUESTIONS. A	TATOLIOUN	AHT SNO!	NE VOLLEY	MOD GITON GC	TINIED	ATDONAGE	1

SAM	IPLE RECEIF	T FORM		7
818				
enviornme	ntal.			
Oil.			R-13-5	-
ical Investigator:	Yelly Won	Storag	e Location:	
30 Envis	montel	Date/Time of	Storage: 18 aug 95 15/3	30PM
portation: Fel E	Date Shippe	d: 17aug 5 D	ate Received: 18 Guy 95	1
	Date	Ü		
Matrix	Sampled	Weight	Comments	_
longleof Pine	16/8/95	N/A	Ambient , Noise	4
White Oak	16/8/95			
Tulip Popla	2 16/8/95	1	J.	
	8/16/95	NIA	Cool in water	
Soil			noin	1
Soil			1	
Soil				_
Sail				
Soil			Section of account of the contract of the cont	j
Sail		THE		
Soil		Programme Commence of the Comm	2 1	
Sail		; 6 ; ;	The Billian server with the property and a specimen	
Soil			map	
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Soil				
Soil		\downarrow		
ONE gut 18 Au	es e	Taken from	Date: 18 aug 95	-18-95
loselles -			Date: 2///1995	
Marcha S	exold		Date: 2/ Gug 95	
			ARC 499100 no ocera	
			15018V LP 80825	22
	Sil investigator: Jackers Cal Investigator: Jackers Cal Investigator: Jackers Matrix Matri	Cal Investigator: Kelly Nave Cal Investigator: Kelly Nave 3 D Environmental portation: Fell Date Shippe Matrix Date Sampled longleaf Pine 16/8/95 White Oak 16/8/95 Tulip Poplar 16/8/95 Lail Sail	Cal Investigator: Kelly Davies Storag 3 D Environmentel Date/Time of s portation: Fel & Date Shipped: 17/2495 D Date Matrix Sampled Weight lengle of Pine 16/8/95 N/A White Oak 16/8/95 N/A Lail Soil Sail	Cal Investigator: Kelly Davies Storage Location: DD Cal Investigator: Kelly Davies Storage Location: DD Cal Investigator: Date/Time of Storage: 18 lug 15 Disportation: Fel & Date Shipped: 11 lug 15 Date Received: 18 lug 15 Disportation: Fel & Date Shipped: 11 lug 15 Date Received: 18 lug 15 Date Received: 18 lug 15 Date Received: 18 lug 15 Date Received: 18 lug 15 Date Received: 18 lug 15 Date Received: 18 lug 15 Date: 18 lug

	SAM	IPLE RECEIP	T FORM	
Study No.: 42	818			
Client: 3b/	Emperment	20		
A 1	6.0			
Principal Analytic	cal Investigator: _/	Kelly do	view Storag	ge Location: B-/3-I
Received From:	3D/Emuer	monetal	Date/Time of S	Storage: 18km 95 12:30 110
Method of Transp	portation: Fed Ex	Date Shippe	1: 17ang 95D	ate Received: 18 aug 95
Šample ID	Matrix	Date Sampled	Weight	Comments
SB3-1	Soil	16 Aug 95	N/A	Cool in water
S03-2	Sail	16 aug 95	1	No ice remaining
SO 3- Dupy	Soil	16 aug 95	. 1	, 0
0		0		
				12 41 45 1243ENT 1243ENT
				444 2 1:1005
				ANG 2 1 1000
				mp
Prepared by: 5/1	water Peza	ed		Date: 18 aug 95
Checked by:	water Leza bover ken	***************************************		Date: 21/11/295
Approved by:	narcha Tes			Date: 18 leng 95 Date: 21 ling 95 Date: 21 ling 95
orm #ACFS-22 (07/20/95))		

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	REQUESTED ANALYSES	OIE VI	Xala Ja:	OC SERIES	нт	F	7					vo	APROVATIVE: A PRESERVATIVE:	<u> </u>	1.1	FOR CAM METALS: X ICC	STLC TTLC	Printed Name Company Name		a Pezold ABC Lobs			
CHAIN-OF-CUSTODY FORM	RRPORT INFORMATION	λ (· Rei	Project Name: 1-750.		Sample Type	1	· ·	-						Sient. Noise				Date Time	18/8/45 C7. D am pm NW	18/24 95 10:30 (mppm Martha	. add as	Bd 88	80 84
Ħ ɔ	RUSH JOB CUSTOMER INFORMATION	Address: 78/ NPO D' P	Date Entered on LIMS: City, State, Zip: CLOCANINE DI	3,922-9	e Time Sampl	Sampled	16Augas Soil			-				winaround Time: Standard Turnaround (10 Working Days)	(TPH, LUFT Samples - 5 Days) Rush 5 Day	Rush 3 Day	Rush 1 Day	Signature	Relinquinhed By: AMU (S. & D.C.)	Received By: A Jan Lake Chall	Relinquibed By:	Received By:	The state of the s

ABC 42818R P6 00054

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	SAN	IPLE RECEIP	T FORM	
Study No.: 46	2818			
· ·	Enviornme	tal		
Analysis: For				
() Principal Analyti	cal Investigator:	Kelly Do	veo Storag	e Location: <u>B-/3-I</u>
				Storage: <u>18au 95 1253</u> 0 pm
Method of Trans	portation: Fed E	∠ Date Shippe	d: 17aug 85D	ate Received: 18 aug 25
Sample ID	Matrix	Date Sampled	Weight	Comments
Su a-1	Sail	16 aug 95	NIA	ambient - noise
542-2		0		
542-3				
Sya-4				
542-4 dup 542-5				
Su2-6				
543-1				
Su 3-4				
543-5			· Programme	
sm 2-1			i Ti	
Sm8-3				21525
Sma-4			:	10
5m 8-5			- \	IW!
Sma-4 Sma-5 Sma-6		\bigvee	V	
Prepared by:	jarcha Pen	eld		Date: 18 Aug 95
Checked by:	Jarcha Ley Laral Key		-	Date: 18 Aug 95 Date: 2/411595
Approved by:	Martha I	endl		Date: Olling9s
Form #ACFS-22 (07/20/95)	(

ABC 42818R P6 00855

25

	SAM	PLE RECEIP	T FORM	
Study No.: 42	318			
Client: 3 D	Enviornme	atel		
Analysis: Fog	Oil			
		Kelly Das	vev Stora	ge Location: <u>B-/3-I</u>
Received From:	3D/ Enviorn	mentel	Date/Time of	Storage: 1864 95 12:30 p.
Method of Trans	portation: Fed Ef	Date Shipped	1:17aug 95 I	Storage: <u>1864, 95 12:30</u> p. 180 Date Received: <u>1664, 9</u> 5
		Date		
Sample ID	Matrix	Sampled	Weight	Comments
Sm 3-1	Soil	16 aug 95	N/A	Ambient. No dec
Sm3-2	Sail	10		
Sm3-4	Sail			
582-1	Sail			
SB2-3	Sail			
500-4	Sail			
5B2-5	Sail			
582-6	Sail			
583-3	Soil		!	
SB3-4	Sail		· · · · · · · · · · · · · · · · · · ·	
583-6	Suil		V	รั้นอันบัตร์
				2 . 1005
				A46 2 1 1995
				ey wwp
	CO 111 1 100			
Depart house	DMP 18ac	1 _		Date: 100
./	Partha First	<u>&</u>		Date: 18 ming 45
Checked by:		-00		Date: 18 Aug 95 Date: 2/Aug 95 Date: 2/Aug 95
Approved by:	Jartha Te	2000		Date: A/Una 45

RBC 42818R P6 00056

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CHAIN-OF-CUSTODY FORM

	RUSH JOB	CUSTC	CUSTOMBR INFORMAT	PORMAT	NOL	-	RHPOR	REPORT INFORMATION	TION		REC	REQUESTED ANALYSES	DANAL	YSES	
	Še.	Customer Name	18/ 18/ 18/	PED B	Lough Such	al Rep	Report Attention: Project, P.O. #:	#: 0773e		hmat		नीय			
	Date Entered on Lights:	City, State, Zip	Q Q Q	JANUA /	101 807	45234roj	Project Name: Od	التروم]: إنتروم]:	1 ET 1	KCCCKK	BTEX	الرك عد	- 70 - 1		-
		ħ	13) 92	5 - 2	50	වී	Copy To:	Irraela Etimid	X III I	-	DIE2	150	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
	Lab Sample L.D.R	Date	Time	Sampler:		1		0	Sample Type	ye No of) 			
	N	Sampled	Sampled	Sie	Client Simple Description	Secription		Location/Depth	0 - Oiber	9		7	1		
Y.	£	Koka 95		91	7	Feet			Ŋ	Ċ		7	-	1	
INC		16 Aug 95		3	t				J	3		7			
EC	1	7	·												
SU															
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	(10 Working Days)		which	h we	35	enteres	Band	Lek D	4	which .		PLAMMABLE?	BLE?	Ξ	H2SO4
	(TPH, LUFT Samples - 5 Days)	5 Days)	6	iels L	Jene	Jours	3.	Coaler		-	i_	EXPLOSIVE	VE?	Ĭ :	HNO3
ARC	Rus 8 Day	٠	4	43	100 'd	1000	3	Walan	100	3	_}	HIGH LEVELS?	VELS7	E	ASCORBIC ACID
42	Rush Dav		7	20		-					×	FOR CAM METALS	ETALS:	×	9
8185	Rush/1 Day											STLC		TTLC	\
}	18										_				
Pf		S	Signature			Date,		Time		Printed Name	аше			Company Name	Name
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95 7	Received By: Mar.	100x	inold			Baus 9	5	10:30 (m) pm	٤	+ ha. 1	620	1/4	*	ABC	14.60
•	Relinquished By:		,					em per					-		
	Reseived By:						-	md me		***************************************			-		
	Received for Laboratory By:							6d 84	_				_		

PLEASE CALL THE NUMBERS LISTED ABOVE FOR COMMENTS, QUESTIONS, AND QUOTATIONS. THANK YOU FOR YOUR CONTINUED PATRONAGE.

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	SAN	APLE RECEIP	T FORM	
Study No.: 47	1818			
	mornman	tal		
Analysis: For	Oil		 	
Principal Analyt) ical Investigator: _A	Kelly Dan	. Storag	ge Location: B-13-I
Received From:	3D/Environne	Jal	Date/Time of	Storage: 18 leng 95 12;
Method of Trans	portation: Fed Ex	Date Shipped	1: 17aug 95 D	ate Received: 18 Guy 95-
		Date	0	
Sample ID	Matrix	Sampled	Weight	Comments
503-1	Secliment	16/8/95	NIA	Bee'd Cool.
S03-a)		in water, ND ice remaining
S				ice remaining
503-4				0
503-5				
503-7				
503-8				
SO 3 - 9			. 7,450	The of Woodings
SD3-10	J		34-114	0 - 1005
Sw3-1	Water			AUG 2 1 1095
SW 3-2	1		- 1 1 1 1 1 1 1	MAP
Sw3-3				VVA.
w3.6				
5W3-8	11:			
	<i>V</i> :			
	OE MH 18	26.4.60		
Prepared by:	1	all sel		Date: 10 A
Checked by:		J		Date: 18 Aug 95 Date: Way 95
Approved by:	•	ael		Date: 2/Qua 95
m #ACFS-22 (07/20/95) (The same of the sa)		Daic. Clung 95

ABC 42818R P6 80058

Form #AC-04 (01/02/92)

OBSERVATIONS AND/OR REMARKS FORM
Test Material: Fog Dil
Sample Type: Water
ABC Study No: 42818
Principal Analytical Investigator: Kelly Doves
Reid on 18 aug 95
4 Battles of water sample - Broken no water remain No level so
remaining. No lakel remaining on braken botto
also rec'd a Bottles of water with no lebel.
The following to labels were dound in the
Shipping Coales.
S W3-4 S W 3-5
Sw3-7
Sw3-9
Sw 3-10
Sw3-10 Dup
Prepared By: Martha Paul Date: 18 aug 95
Checked By: 1820 Date: 21 Aug 95
Principal Analytical Investigator: Date: 21 Aug 95

ABC 42818R **P6** 00059

ABC Laboratories, Inc					
	OBSERV	ATIONS AND/OR	REMARKS FORM		
Test Material:					
Sample Type:					
ABC Study No:					
Abe stody No.					_
Principal Analytical	Investigator:				
Specie	ally Cleaned	***			.
BONNENTAL SCIENCE Sample	le Container EA	GLE EP FICHER	Specially Cleaned	AGLE PICHER	Specially Cleaned Sample Container
TECHNOLOGY DEPT.	\ \tau_{\text{5}}	& TECHNOLOGY DEPT.		ENVIRONMENTAL SCIENCE & TECHNOLOGY DEPT.	Sample Container
1-800-331-7425		1.800-331-7425	3D/E	0 B.J. TUNNELL BLVD., MAME OK 74354 1-800-331-7425	3D/E
195 MAN BY A	36 DET	8/45 125-	COULECTED ARCS	[F(% 1333	COLLECTED ASS
we in all bis		PLINC 1 29 011		The Tod bil	Privet
LETYPE: b _ Composite	SAMI	PLE TYPE:		WP'E TYPE:	TIDAG
		inab Composite Othe		CONTROL CONTROL	PRESERVATIVE
£158-16	¦ su	いろ		5w3-7	
	6			3	.
			Specially Cleane	, EAGLE를PPICHI	Specially Clear Sample Conta
EAGLE	Specially Cleaned Sample Containe		Sample Contain	a TECHNOLOGY DEPT.	lot#:
ENVIRONMENTAL SCIENCE & TECHNOLOGY DEPT.			Lot #:	200 B.J. TUNNELL BLVD., MAM, OK 7 1-800-331-7425	COS4 COC W.
200 B.J. TUNNEELL BLVD., MAME, OK. 74354 1-800-331-7425	3D/E	л-7425 —		DATE IN TIME	COLLECTED BY: A
PATE OF TIME	COLLECTED BY:	- , High	COLLECTED	- SAMPLING 5763	Br. ACC
		- 'Site 3		SAMPLE TYPE:	
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Gsab Composite Ce		E3W3-10		_	
				a cap	
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Gest Composite C	PRESERVATIV	± 35219	3 Date:	۵ ,	
Gest Composite C	PRESERVATIV	± 35219	3 Date:	۵ ,	
Gest Composite C	PRESERVATIV	5w3-10 c#35219	3 Date:	c '	

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CHAIN-OF-CLISTODY FORM

				1	i	AIN-CI	-CC2	CHAIN-OF-CUSTODY FORM	CKN			1				
_	KUSH JOB	CUSTO	CUSTOMER INFORMATI	ORMAT	NOI		REPO	REPORT INFORMATION	MATIO	z		RE	REQUESTED ANALYSES	ANALY	SES	
	ABC/Pan-Ag Labs Job #;	Customer Name:		STORY OF THE PROPERTY OF THE P		ATCA R	Report Attention:	Æ.	A CAR	Z	hmad		croh			
	Date Entered on LIMS:	City, State, Zip:	je: O	LOCAL CONTRACT	I I	4523	Roject Name:	Z	E O	<u></u>		x	John J.			
	<i>)</i>	Phone: 15	989	-500	SISS	ية	Project Manager	ager:		ſ						
	10	Fax #:				0	Copy To:	Smet	12h	hmid	+		100 P			
<i>-</i> -	tab Sadbie LD.	Date	Time	Sampler:				D	Sem	Sample Type	70 01	-H47	J~V	<u> </u>		
		Sampled	Sampled	'\ Client		Sample Description		Location/Depth		S. Sell, LLiquid	Containers		80			
X	6	78K		5 Wille	ace wet	State Parter	יע	いた。4	_			``	7			
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-				AB	X		3									
	Turnground Time:		Comments:									Ą	ARE SAMPLES:	<u></u>	PRESERVATIVE:	IVB:
	Standard Turnaround	round	Samples	rec'd	ambient	4: 4	kables.	1.11 off	10	(hr sa	samples	1	TOXIC?		N ₈ OH	
	(10 Working Days)		beeringe	of the	la Hes			a scale	/key &	Lece pu	t ca		FLAMMABLE?	Fe Fe	H2SO4	
	(TPH, LUFT Samples - 5 Days)	Days)	the see.	surges He	3	. -	14 +0	have cam	me e	بودر	and	1	EXPLOSIVE?	£1	HNO3	
	Kush 3 Day	<u> </u>	MACKED		3	Lake Devis	7 7	4	454.00	Mark	20		HIGHLEVELS?	irs,	HCI	0,0
	Rush 2 Day	,	9.72-95	12/2	Salpmage -	7	Lored	· Mal /	3	3			FOR CAM METALS	l LALS:	- X	ASCURBIC ACID
	Rush 1 Day	• 4		1	77.0 8.22-65	-12							STLC	TTLC	<u>)</u>	
	s) 23															
	3.	Sign	Signature			17, Date		Time			Printed Name	Вe		රි	Company Name	
	Relinquished By: 41 AM	16RDE	8			5/8/8	7,7	100	- md me	1 MY	G38	120		くり	Æ	
	Received By: Timo IL	¥ _,	Burks		•	2.15.95	5.44	10:00 G pm	<u>[</u>	mothy	T. buck	45		ABC	Labs	
	Relinquished By:					{		8	6 6	^						
	Received By:							6	60 E							
	Received for Laboratory By:							4	80 00							
	1110 1010	TIE NI WATER CO.	11001 1000	1 11000	500 000	0.22.4.2.4	or reference to									

PLEASE CALL THE NUMBERS LISTED ABOVE FOR COMMENTS, QUESTIONS, AND QUOTATIONS. THANK YOU FOR YOUR CONTINUED PATRONAGE.

ABC Laboratories, Inc.									
SAMPLE RECEIPT FORM									
Study No.: 428218									
Client:30	/ Environmenta								
Analysis:foq									
Principal Analyti	cal Investigator:	Tim Spurge	Storag	e Location:					
Received From:	30 Environmenta	1	Date/Time of S	Storage: <u>3:55 8-11-15</u>					
Method of Trans	portation: fed Ex	Date Shippe	d: <u>8 - 18 - 95</u> Da	ate Received: 8.22.95					
		Date							
Sample ID	Matrix	Sampled	Weight	Comments					
54-1	Leaves / bark	8-17-95		samples rec'd					
504-2	Leaves / bark	8-17-95	•	ambient. TTB					
5 4 7 - 3	Leaves/bark	8-17-95	_	8-12-45					
Sw4 -1	Water	8-17-45	_						
sw 4 - 3	water	8-17-95	-						
sw4 - 4	water	8-17-95	- 'TH	S" IS AN EXACT COPY OF ORIGINAL "DOCUMENT"					
5w4 -5	Water	8-17-95	_						
5w4- b	Water	8-17-95	-	AUG 2 4 1995					
SW4-7	water	8-17-95		MAP					
5w4-dup-7	water	8-17-95	-						
sw4 - 8	water	8-17-95	_						
SW4-10	water	8-17-95	•	·					
-	_	-	-	These sample lakes wire loss					
SWU-X	water	8-17-45	•	! ' !					
sw4 - 9	water	8-17-95		in the cooler - they were placed on the bitths they are thought to Gone from and the bittles marked					
				From and the bettles merked ETTB 8-22-85 8:2					
Prepared by:	limothy S.	Burks		Date: 8-22-95					
_	Parcha Desall	2		Date: <u>8-03-9</u> 5					
Approved by: 🔀	. ~	el		Date: <u>8-23-9</u> 5					
Form #ACFS-22 (07/20/95)									

Pan-Ag Labs (Environmental Chemistry Analysis) 32380 Avenue 10 • Madera, California 93638 (209) 675-0889 • (800) 846-0008 • FAX (209) 675-0884

A Division of _____Laboratories, Inc. 7200 E. ABC Lane, Columbia, MO 65202 Tel: 314/474-8579 Fax: 314/43-9033

CHAIN-OF-CUSTODY FORM

L GOLLISON	The initial motions				TOTAL WINNESS TOTAL WAS AN AND THE SECOND OF					
ABC/Pan-Ag Labs Job #:	Customer Name:	R	EN ITENTIFICATION		Report Attention: ANDR	C SCHWA	\$	\(\nabla \)		
	Address: 781	Noo	000	Project, P.O. #:	10. #: D7732	2 (9		م		
Date Entered on LIMS:	City, State, Zip:	7007	ind, of 452	33 Project Name:	lame: Fizza DU			Pyrj 		
	Phone (5) 3	1920	2-8199	Project Manager	fanager:					
	Fax#:			Copy To: A	Aroela S	xhmu	# +			
Lab Sample I.D.#	v	Time	Sampler:		D D	Sample Type	Jo ok	i-Hat I-Hat		
	Sampled / Sai	mpled	Client Sample Description	escription	Location/Depth	F. Fani, L. Liquid O = Other	Containers		4	
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Turnaround Time: Standard Turnaround (10 Working Days)		Comments:	id auch	int				ARE SAMPLES: TOXIC! A	S: PRESERVATIVE:	TIVE:
(TPH, LUFT Samples - 5 Days)	Days)							EXPLOSIVE?		
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Rush 3 Day									· ASCOR	ASCORBIC ACID
Rush 1 Day								FOR CAM METALS	ETALS: X (CD	9
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Relinquished By:)			2	Bd Be					
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PLEAST CALLTIT "TIMBERST IS	TII' "IMBER		" AROVE FOR COM	FOR COMMENS OUESTIONS	ION" "NOTATIO	l	THANK Y	THEINITACE TO SOLL	BOANO OF STREET	

ABC 42818R

PG 00063

SAMPLE RECEIPT FORM									
Study No.: 1/25/18									
Client: $3D/$	Enviornme	ntal.							
Analysis: Fo									
Principal Analyti	ical Investigator: _	Kelly D	suca Storag	ge Location: 8-13-1					
				Storage: 24 aug 95 12	308m				
Method of Trans	portation: Led T	_ Date Shippe	ed: <u>18 aug</u> s D	ate Received: 220us 95					
		Date							
Sample ID	Matrix	Sampled	Weight	Comments					
544-1	Soil	8-17-95	N/A	Rec'd ambient					
344-2				Stard & 11-aisle					
844-3				22-aun 95					
544-4				g ·					
544-5									
544-6									
SU4-Dup-6	V		V						
Sm 4-1	Soil	8-17-95	NIA						
9m4-2			1						
Sm4-3				THIS" IS AN EXACT COPY OF THE ORIGINAL "DOCUMENT"					
5m4-4				0 4 1005					
Sm 4-5				AUG 2 4 1995					
Sm4-6			В	MHP					
SB4-1									
884-2									
5B4-Dup2	1	,/	1						
Prepared by: \(\square\)	Partha Per	el		Date: 8-24-95					
Prepared by:	nothy J. B.	rks		Date: 8-24-95					
Approved by:	Jarta Plan	ed		Date: 8-24-95 Date: 8-24-95					
rm #ACFS-22 (07/20/95)									

SAMPLE RECEIPT FORM									
Study No.: 42818									
Client: 3D/Ennioramental									
Analysis: For	Analysis: Fog Oil Principal Analytical Investigator: Kelly Danies Storage Location: Sel. = 0"regis								
Principal Analyti	ical Investigator: 🔀	Kelly Dan	. Storag	ge Location: Sel, = 0"					
Received From:	3D/Envier	amental	Date/Time of	Storage: 24 aug 95 12/30					
Method of Trans	portation: Fed Ex	_ Date Shippe	d: 18 Cuy 95 D	ate Received: 20 aug 95					
		Date	0						
Sample ID	Matrix	Sampled	Weight	Comments					
SB4-3	Soil	8-17-95	N/A	Rec'd ambient					
384-4				Stored B-11-aises					
584-5				22au 95					
SB4-6	V			9					
SD4-1	Sedement								
504-2									
504-3									
504-4				<u>`</u>					
304-5									
504-6									
SD4-7									
504-dup-7				THIS" IS AN EXACT COPY OF THE ORIGINAL "DOCUMENT					
304-8				AUG 2 4 1995					
SD4-9				A00 2 4 1990					
504-10	1			BY MAD					
Prepared by:	Naveta Pu	ed		Date: 8-24-95					
Checked by:	Timothy T. B.			Date: 8-24-95					
Approved by:	Marcha Tes	eld		Date: 8-24-95					
Form #ACFS-22 (07/20/95)									

Sequence: /chem/msd.i/fog.s Vial: 3 Injection: 1

External Standard Report

Information from Current Data File Header:

File: /chem/msd.i/fog/Fog0301003.d

Operator: Kelly Davis

Date Acquired: Wed Oct 11 95 09:00:15 AM

Sample Name: 10 ug/ml PAH's

Misc Info:

Sequence Index: 1 Bottle Number: 3 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Thu Oct 12 09:56:03 1995

Reference Peak Window: 5.000 % of Retention Time Non-reference Peak Window: 5.000 % of Retention Time

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

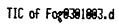
Default Multiplier: 1

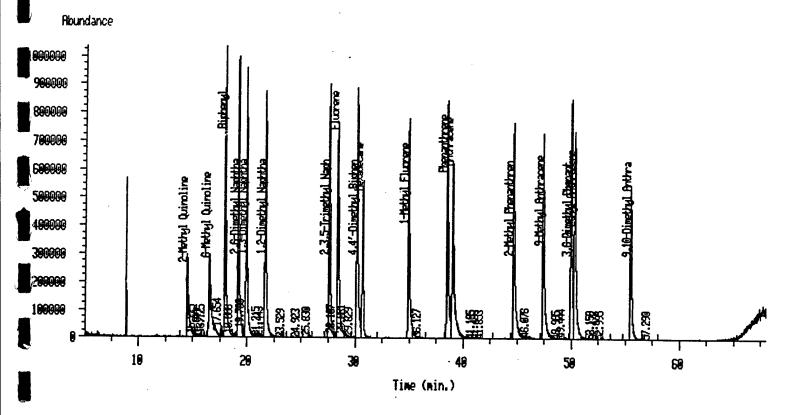
Peak	Int.	Ret.	Signal	Compound		
Num Type	e Type	Time	Description	Name	Area	Amount
1	BH	14.503	Total Ion	2-Methyl Quinoline	32299709	10.59 ug/mL
2	VH	16.529	Total Ion	6-Methyl Quinoline	43702704	11.03 ug/mL
3	VH	17.933	Total Ion	Biphenyl	81634491	10.08 ug/mL
4	VH	19.155	Total Ion	2,6-Dimethyl Naphtha	79811820	10.09 ug/mL
5	VH	19.903	Total Ion	1,3-Dimethyl Naphtha	83560133	10.17 ug/mL
6	PH	21.653	Total Ion	1,2-Dimethyl Naphtha	81115214	10.20 ug/mL
7	PH	27.562	Total Ion	2,3,5-Trimethyl Naph	86291667	10.18 ug/mL
8	VH	28.358	Total Ion	Fluorene	82887351	10.17 ug/mL
9	VH	30.155	Total Ion	4,4'-Dimethyl Biphen	84248766	10.27 ug/mL
10	VH	30.698	Total Ion	Hexadecane	48899278	10.10 ug/mL
11	BH	34.912	Total Ion	1-Methyl Fluorene	80957983	10.22 ug/mL
12	BH	38.501	Total Ion	Phenanthrene	86582300	10.15 ug/mL
13	VH	39.009	Total Ion	Anthracene	86721254	10.22 ug/mL
14	BH	44.649	Total Ion	2-Methyl Phenanthren	85603102	10.22 ug/mL
1 5	PH	47.383	Total Ion	9-Methyl Anthracene	79862691	10.15 ug/mL
16	PH	49.971	Total Ion	3,6-Dimethyl Phenant	81253819	10.07 ug/mL
17 .	VH	50.294	Total Ion	2-Ethyl Anthracene	85406239	10.14 ug/mL
18	PH	55.460	Total Ion	9,10-Dimethyl Anthra	55718891	10.15 ug/mL

Run: 3

October 12, 1995

Page: 1





. Vial: 4 Injection: 1 Sequence: /chem/msd.i/fog.s

External Standard Report

Information from Current Data File Header:

File: /chem/msd.i/fog/Fog0401004.d

Operator: Kelly Davis

Date Acquired: Wed Oct 11 95 10:59:58 AM Sample Name: 5 ug/ml PAH's

Misc Info:

Bottle Number: 4 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Thu Oct 12 09:56:03 1995

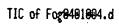
Reference Peak Window: 5.000 % of Retention Time Non-reference Peak Window: 5.000 % of Retention Time

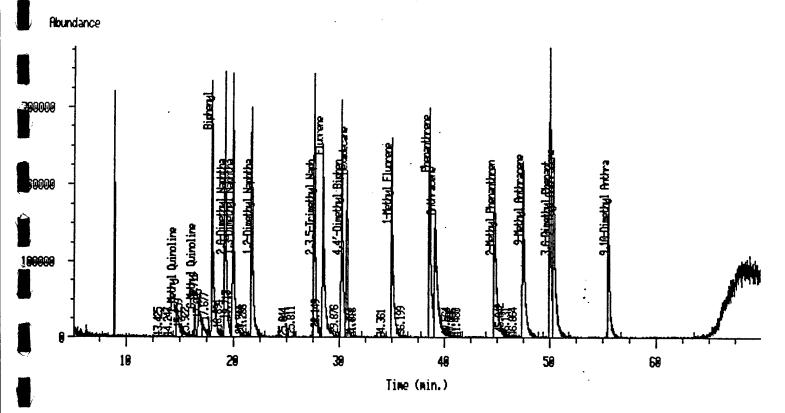
Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

Default Multiplier: 1

Peak Num Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1	PH	14.666	Total Ion	2-Methyl Quinoline	7132669	3.674 ug/mL
2	VH	16.399	Total Ion	6-Methyl Quinoline	2228434	2.685 ug/mL
3	PH	17.953	Total Ion	Biphenyl	34041441	4.825 ug/mL
4	PH	19.169	Total Ion	2,6-Dimethyl Naphtha	32689754	4.787 ug/mL
5	VH	19.907	Total Ion	1,3-Dimethyl Naphtha	34352724	4.615 ug/mL
6	PH	21.664	Total Ion	1,2-Dimethyl Naphtha	31990401	4.545 ug/mL
7	BH	27.566	Total Ion	2,3,5-Trimethyl Naph	34360858	4.585 ug/mL
8	PH	28.387	Total Ion	Fluorene	33669392	4.621 ug/mL
9	PH	30.177	Total Ion	4,4'-Dimethyl Biphen	30018159	4.395 ug/mL
10	VH	30.688	Total Ion	Hexadecane	21447455	4.770 ug/mL
11	PH	34.934	Total Ion	1-Methyl Fluorene	30739918	4.512 ug/mL
12	BH	38.533	Total Ion	Phenanthrene	35127778	4.657 ug/mL
13	VH	39.073	Total Ion	Anthracene	32959879	4.499 ug/mL
14	BH	44.697	Total Ion	2-Methyl Phenanthren	32473390	4.506 ug/mL
15	PH	47.411	Total Ion	9-Methyl Anthracene	32500570	4.669 ug/mL
16	PH	49.965	Total Ion	3,6-Dimethyl Phenant	35366296	4.840 ug/mL
17	VH	50.306	Total Ion	2-Ethyl Anthracene	34740062	4.675 ug/mL
18	BH	55.482	Total Ion	9,10-Dimethyl Anthra	22319242	4.669 ug/mL





Sequence: /chem/msd.i/fog.s Vial: 5 Injection: 1

External Standard Report

Information from Current Data File Header: File: /chem/msd.i/fog/Fog0501005.d

Operator: Kelly Davis

Date Acquired: Wed Oct 11 95 12:52:50 PM

Sample Name: 1 ug/ml PAH's

Misc Info:

Bottle Number: 5 Repetition Number: 1

Fog Oil PAH's

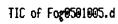
Calibration Table Last Updated: Thu Oct 12 09:56:03 1995

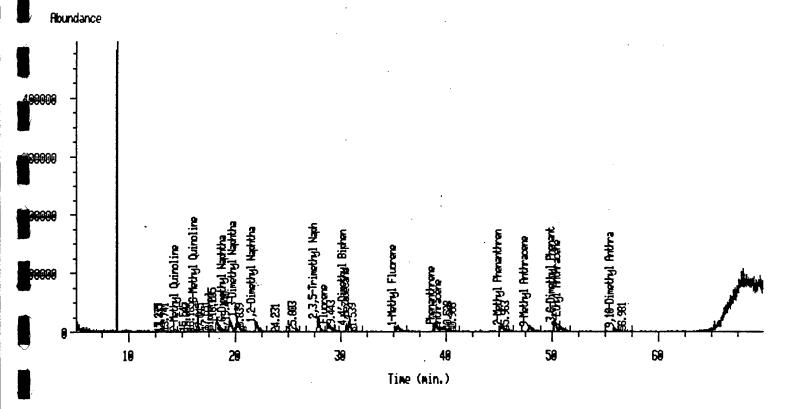
Reference Peak Window: 5.000 % of Retention Time Non-reference Peak Window: 5.000 % of Retention Time

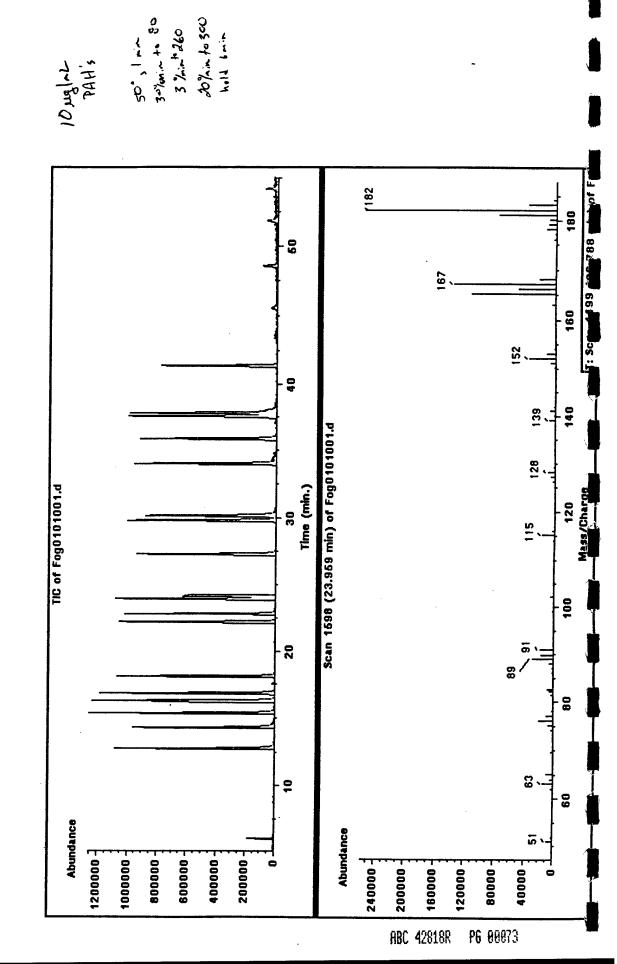
Default Sample Amount: 0 Uncalib. Peak Response Factor: 0

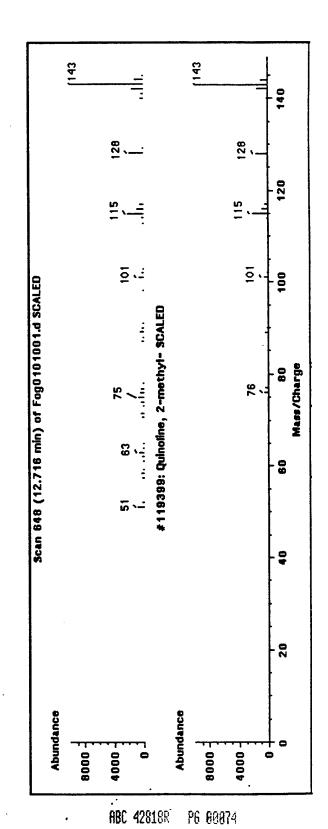
Default Multiplier: 1

Peak Num Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1	PH	14.648	Total Ion	2-Methyl Quinoline	79877	1.736 ug/mL
2	PH	16.423	Total Ion	6-Methyl Quinoline	2428893	2.726 ug/mL
3	PH	17.923	Total Ion	Biphenyl	271208	1.097 ug/mL
4	PH	19.132	Total Ion	2,6-Dimethyl Naphtha	119667	1.118 ug/mL
5	VH	20.105	Total Ion	1,3-Dimethyl Naphtha		1.214 ug/mL
6	PH	21.878	Total Ion	1,2-Dimethyl Naphtha	3400642	1.253 ug/mL
7	BH	27.761	Total Ion	2,3,5-Trimethyl Naph		1.230 ug/mL
8	PH	28.757	Total Ion	Fluorene	3414317	1.211 ug/mL
9	PH	30.504	Total Ion	4,4'-Dimethyl Biphen	1766883	1.336 ug/mL
10	VH	30.797	Total Ion	Hexadecane	2702024	1.128 ug/mL
11	BH	35.269	Total Ion	1-Methyl Fluorene	2214320	1.271 ug/mL
12	BH	38.960	Total Ion	Phenanthrene	2665997	1.190 ug/mL
13	VH	39.541	Total Ion	Anthracene	2713257	1.278 ug/mL
14	BH	45.263	Total Ion	2-Methyl Phenanthren	2414277	1.274 ug/mL
15	BH	47.784	Total Ion	9-Methyl Anthracene	2360146	1.184 ug/mL
16	BH	50.236	Total Ion	3,6-Dimethyl Phenant	2471896	1.089 ug/mL
17	VH	50.786	Total Ion	2-Ethyl Anthracene	2373281	1.181 ug/mL
18	BH	55.820	Total Ion	9,10-Dimethyl Anthra	1076171	1.184 ug/mL

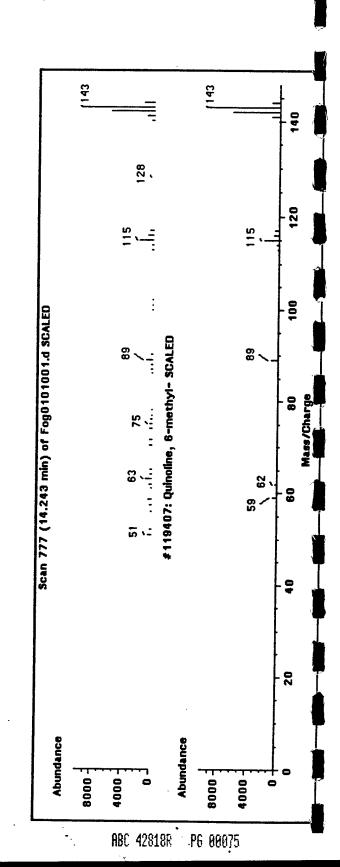


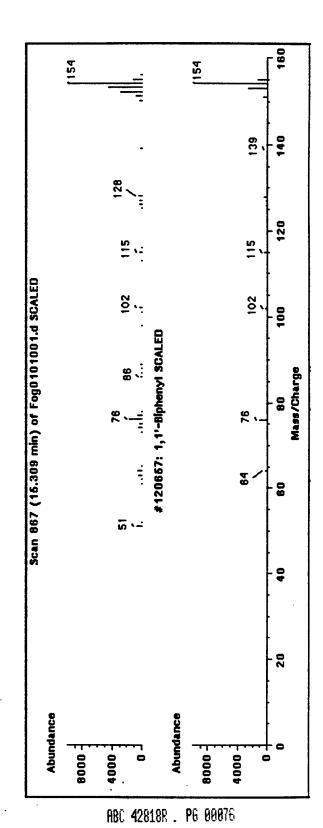


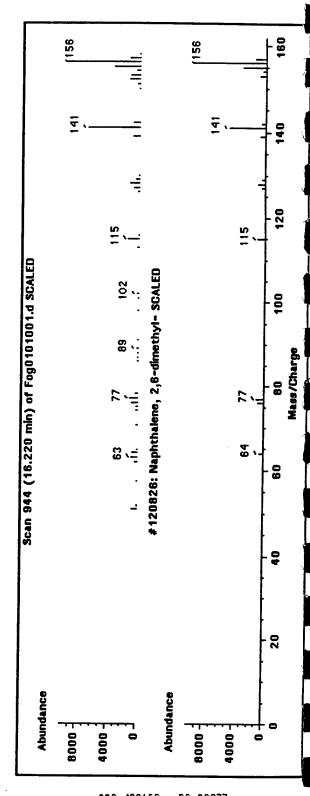




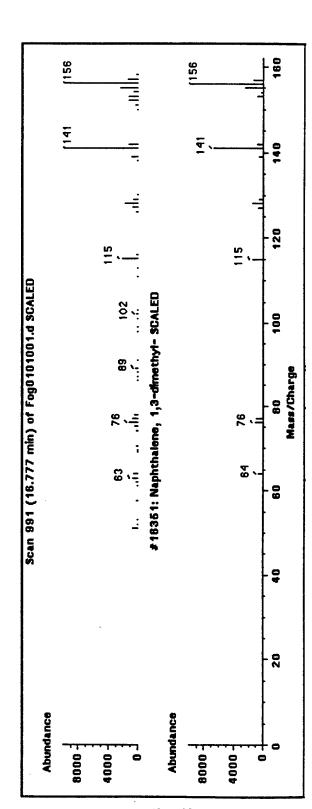
P6 **6**0074



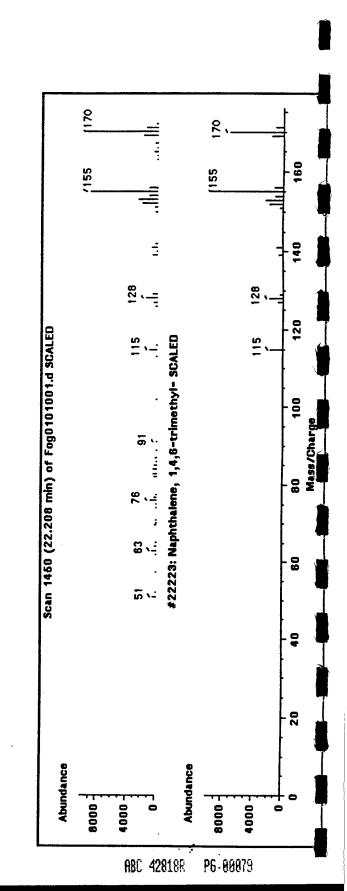


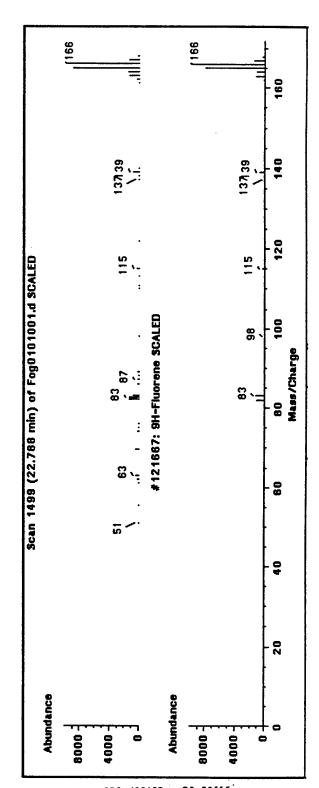


ABC 42818R PG 00077

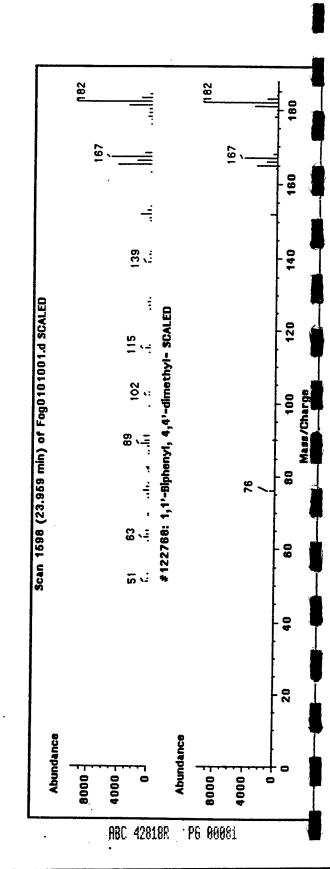


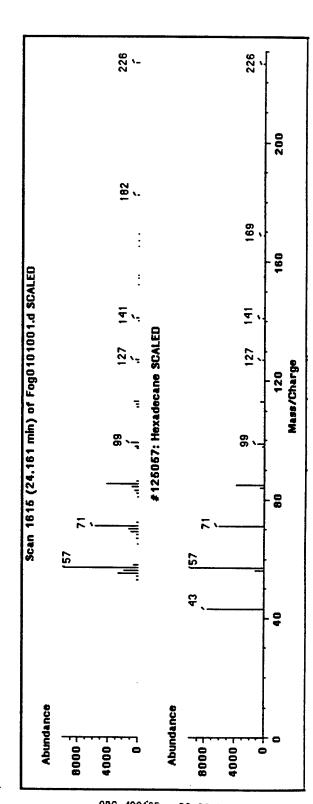
ABC 42818R P6 00078



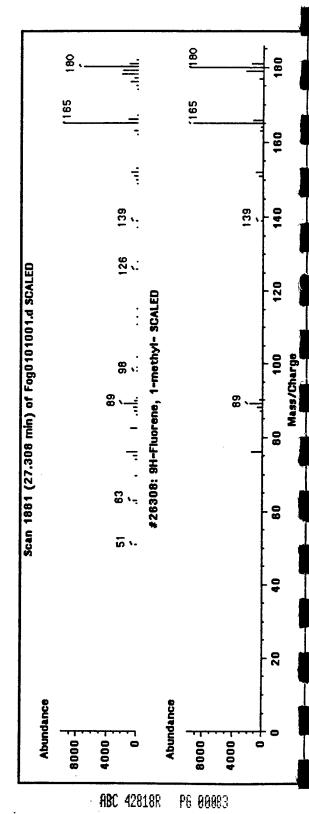


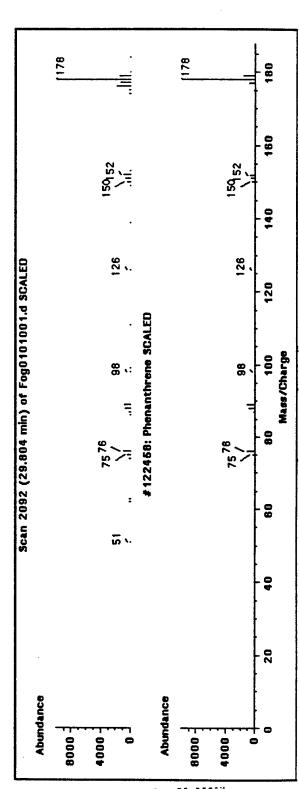
RBC 42818R- PG 00980



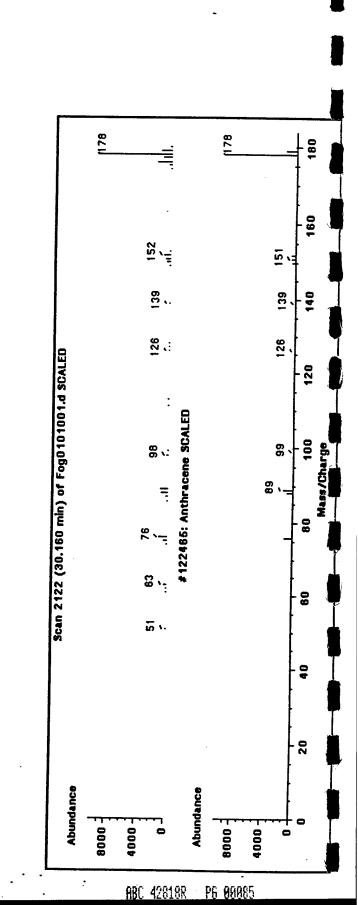


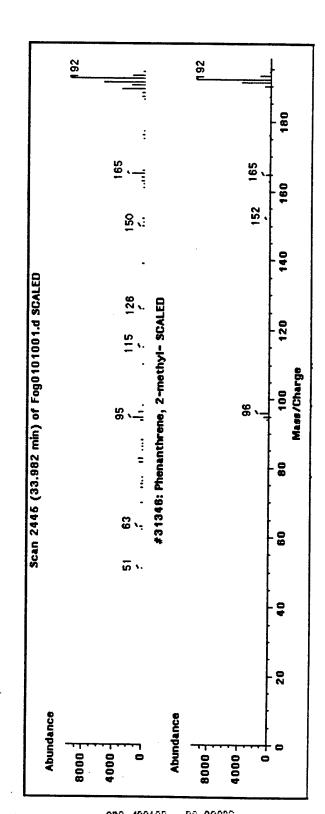
ABC 42818R + P6 00082



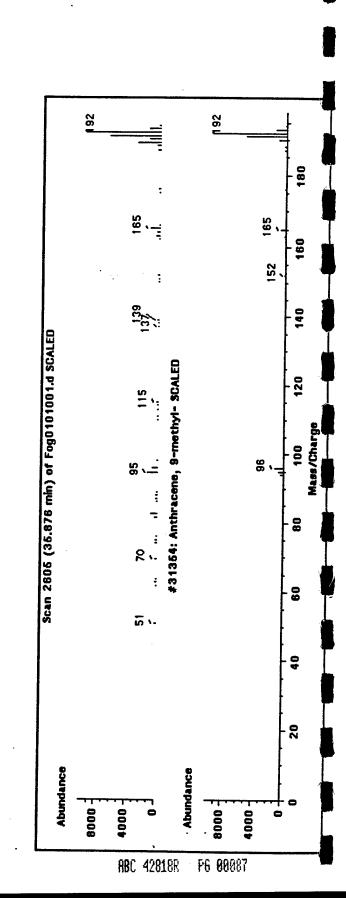


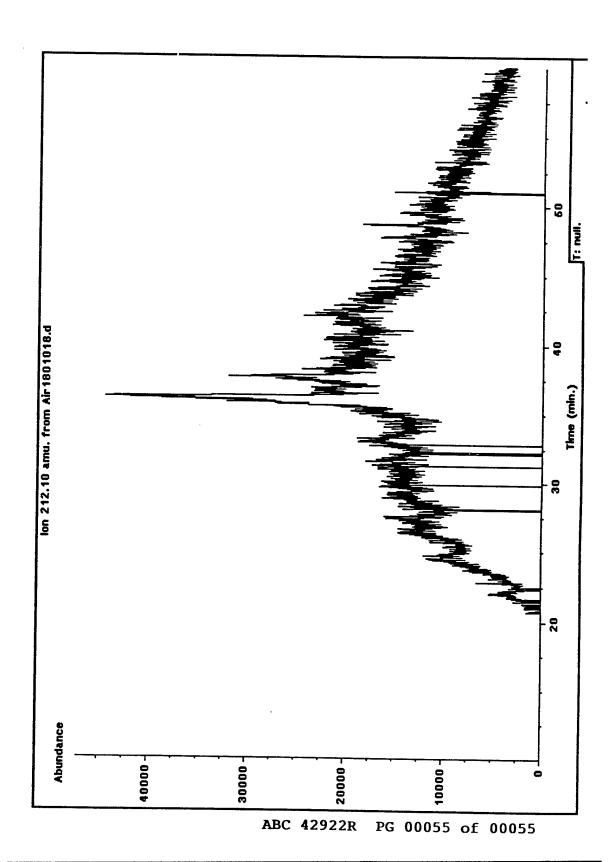
ABC 42818R P6 00084

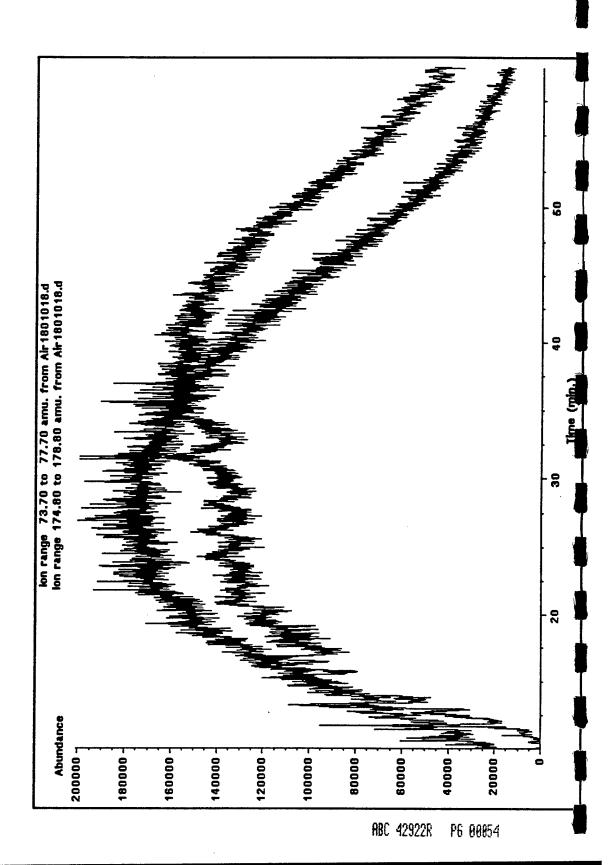


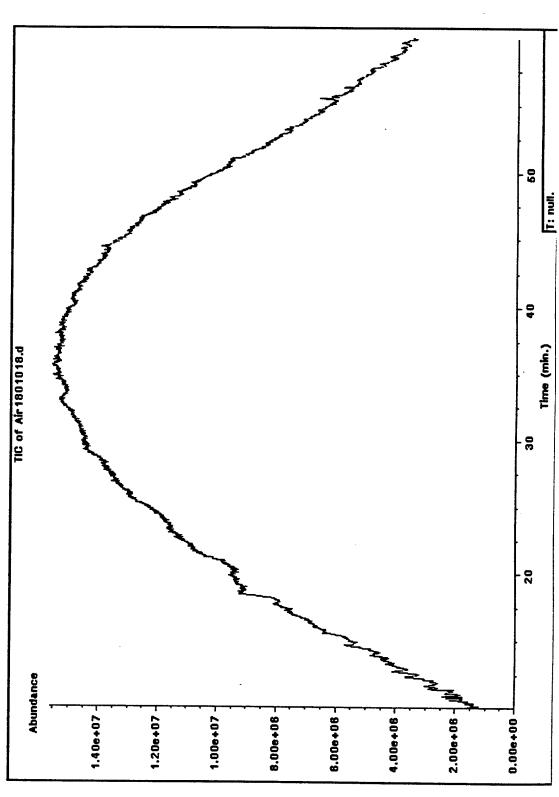


ABC 42818R P6 90086

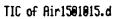


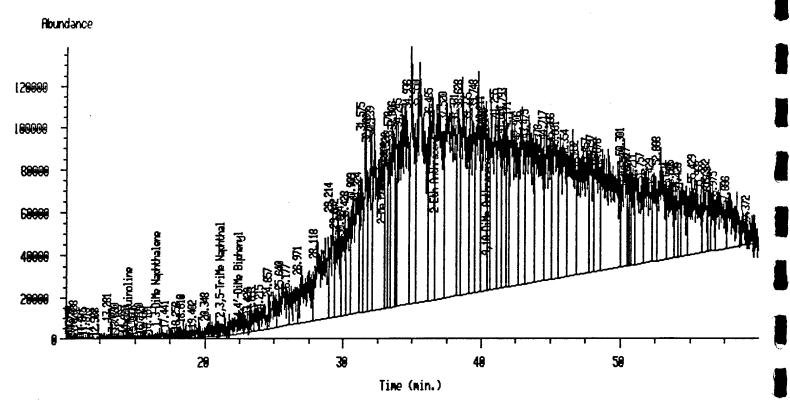






ABC 42922R P6 00053





Information from Current Data File Header:

File: /chem/msd.i/air/Air1501015.d

Operator: Kelly Davis

Date Acquired: Wed Nov 08 95 09:50:46 PM

Sample Name: Sample 12

Misc Info:

Sequence Index: 1 Bottle Number: 15 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

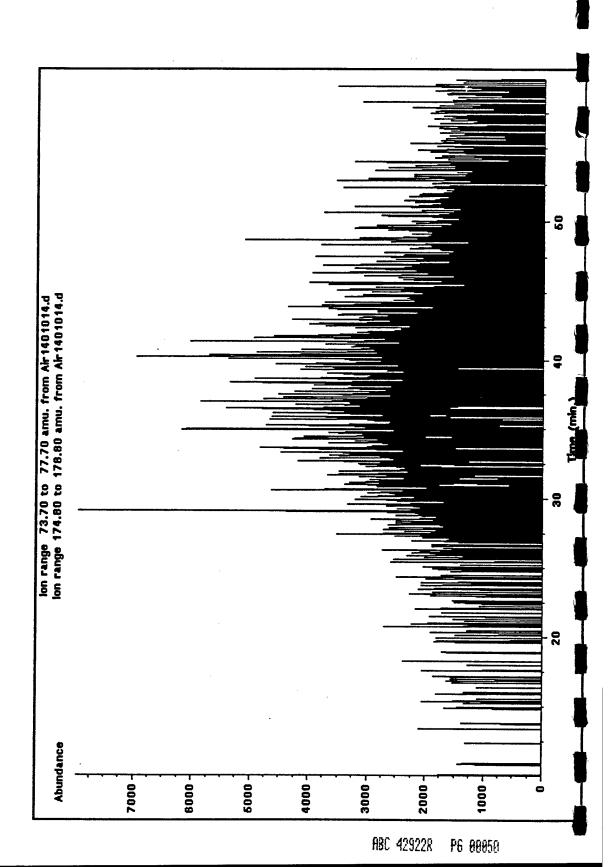
Default Multiplier: 1

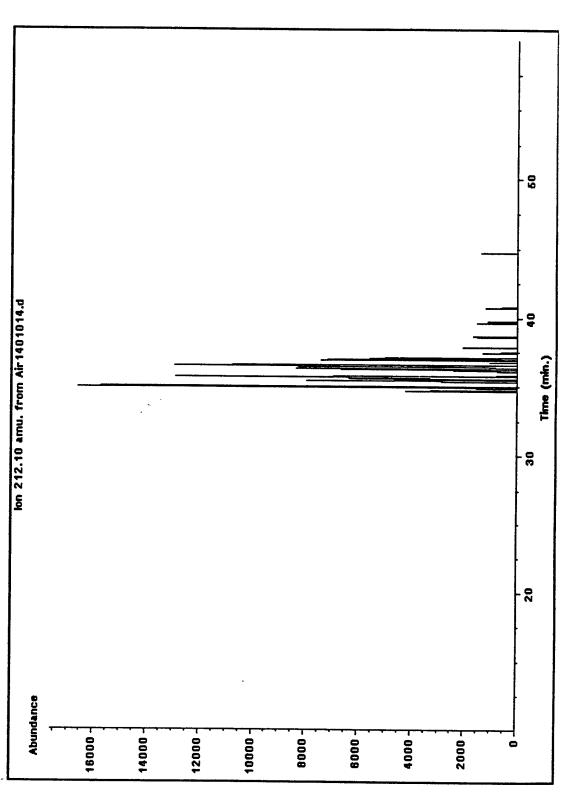
Peak Num Typ	Int. e Type	Ret. Signal Time Description	Compound Name	Area	Amount
1		- Total Ion	2-Me Quinoline	-Not Found-	
2	VH	14.793 Total Ion	6-Me Quinoline	135753	
3		 Total Ion 	Biphenyl	-Not Found-	
4		 Total Ion 	2,6-DiMe Naphthalene	-Not Found-	
5	PV	16.842 Total Ion	1,3-DiMe Naphthalene	514095	
6		 Total Ion 	1,2-DiMe Naphthalene	-Not Found-	
7	W	21.423 Total Ion	2,3,5-TriMe Naphthal	2053799 0.	08910 ng/ul
8 9		 Total Ion 	Hexadecane	-Not Found-	
		 Total Ion 	Fluorene	-Not Found-	
10	PV	22.731 Total Ion	4,4'-DiMe Biphenyl	4295961 0.	4610 ng/ul
11		 Total Ion 	1-Me Fluorene	-Not Found-	
12		 Total Ion 	Phenanthrene	-Not Found-	
13		 Total Ion 	Anthracene	-Not Found-	
14	VV	33.081 Total Ion	2-Me Phenanthrene	10873682 1.	542 ng/ul
15		 Total Ion 	9-Me Anthracene	-Not Found-	
16		 Total Ion 	3,6-DiMe Phenanthren	-Not Found-	
17	VV	36.919 Total Ion	2-Eth Anthracene		271 ng/ul
18	VV	40.719 Total Ion	9,10-DiMe Anthracene	19909357 3.	846 ng/ul

*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***

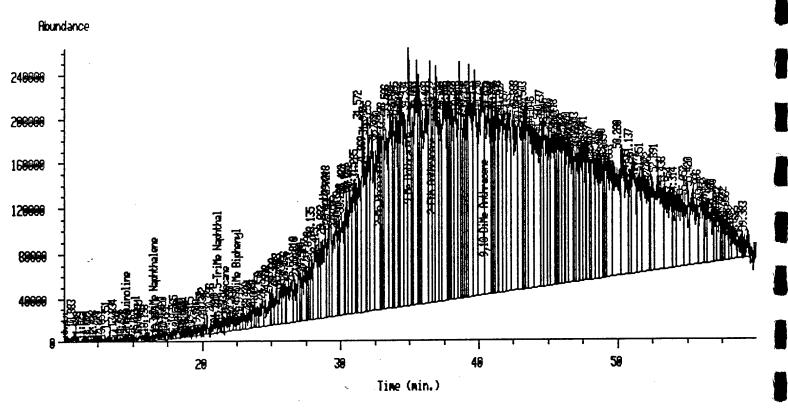
Run: 15 November 10, 1995 Page: 1





ABC 42922R P6 00049

TIC of Air1401014.d



Sequence: /chem/msd/air.s Vial: 14 Injection: 1

External Standard Report

Information from Current Data File Header: File: /chem/msd.i/air/Air1401014.d Operator: Kelly Davis

Date Acquired: Wed Nov 08 95 08:43:21 PM

Sample Name: Sample 11

Misc Info:

Sequence Index: 1 Bottle Number: 14 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

Default Multiplier: 1

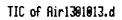
	eak Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amo	unt
1			- Color	Total Ion	2-Me Quinoline	-Not Found-		
2		VV	14.790	Total Ion	6-Me Quinoline	286141		
3		VV	15.497	Total Ion	Biphenyl	815376		
4 5			_	Total Ion	2,6-DiMe Naphthalene	-Not Found-		
5		PV	16.828	Total Ion	1,3-DiMe Naphthalene	1049889		
6			_	Total Ion	1,2-DiMe Naphthalene	-Not Found-		
7		VV	21.420	Total Ion	2,3,5-TriMe Naphthal	1444217		
8 9		VV	21.972	Total Ion	Hexadecane	1695533	0.2194	na/iil
			_	Total Ion	Fluorene	-Not Found-	******	9/ 41
10		VV	22.753	Total Ion	4,4'-DiMe Biphenyl	1329757		
11			_	Total Ion	1-Me Fluorene	-Not Found-		
12		VV .	29.074	Total Ion	Phenanthrene	7523668	0.9550	ກα/ນໄ
13			_	Total Ion	Anthracene	-Not Found-		9/ 41
14		W	33.072	Total Ion	2-Me Phenanthrene	15547519	2.361	ng/ul
15		VV	35.194	Total Ion	9-Me Anthracene	11428474	1.670	ng/ul
16			-	Total Ion	3,6-DiMe Phenanthren			
17		VV	36.922	Total Ion	2-Eth Anthracene	23929794	3.840	ng/ul
18		VV	40.722	Total Ion	9,10-DiMe Anthracene	41605115	8.336	ng/ul

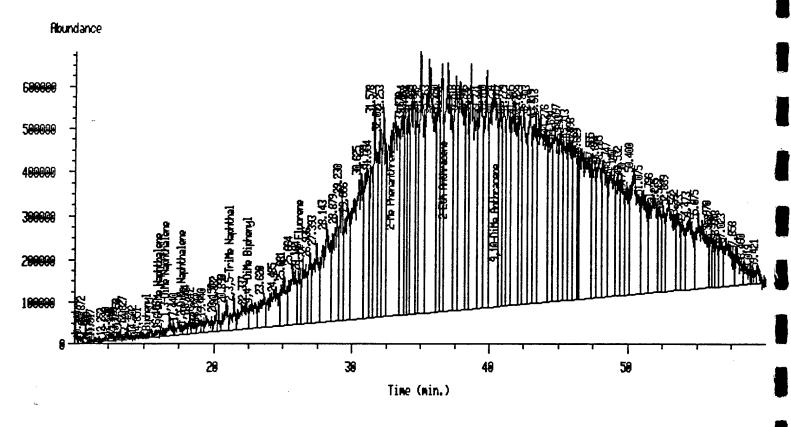
*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***

Run: 14

November 10, 1995





Sequence: /chem/msd/air.s Vial: 13 Injection: 1

External Standard Report

Information from Current Data File Header: File: /chem/msd.i/air/Air1301013.d

Operator: Kelly Davis

Date Acquired: Wed Nov 08 95 07:35:58 PM

Sample Name: Sample 10

Misc Info:

Sequence Index: 1 Bottle Number: 13 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

Default Multiplier: 1

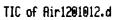
	eak Type	Int. Type	Ret. Time	Signa Descrip		Compound Name	Area	Amou	nt
1			-	Total	Ion	2-Me Quinoline	-Not Found-		
2			_	Total	Ion	6-Me Quinoline	-Not Found-		
3		VV	15.506	Total	Ion	Biphenyl	3288090	0.1935	ng/ul
4		W	16.352	Total	Ion	2,6-DiMe Naphthalene	991482		٥,
5		VV	16.830	Total	Ion	1,3-DiMe Naphthalene	7401729	0.9269	ng/ul
6		VV	17.995	Total	Ion	1,2-DiMe Naphthalene	3354631	0.2572	
7		VV	21.426	Total	Ion	2,3,5-TriMe Naphthal	12211989	1.812	ng/ul
8 9			_	Total	Ion	Hexadecane	-Not Found-		
			-	Total	Ion	Fluorene	-Not Found-		
10		VV		Total		4,4'-DiMe Biphenyl	16187392	2.519	ng/ul
11		VV	26.416	Total	Ion	1-Me Fluorene	32340216	5.606	ng/ul
12			-	Total	Ion	Phenanthrene	-Not Found-		
13			-	Total	Ion	Anthracene	-Not Found-		
14		VV	33.077	Total	Ion	2-Me Phenanthrene	225777534	39.21	ng/ul
15			-	Total		9-Me Anthracene	-Not Found-		
16			-	Total	Ion	3,6-DiMe Phenanthren	-Not Found-		
17		VV		Total		2-Eth Anthracene	198404003	34.23	ng/ul
18		VV	40.723	Total	Ion	9,10-DiMe Anthracene	69975960	14.21	ng/ul

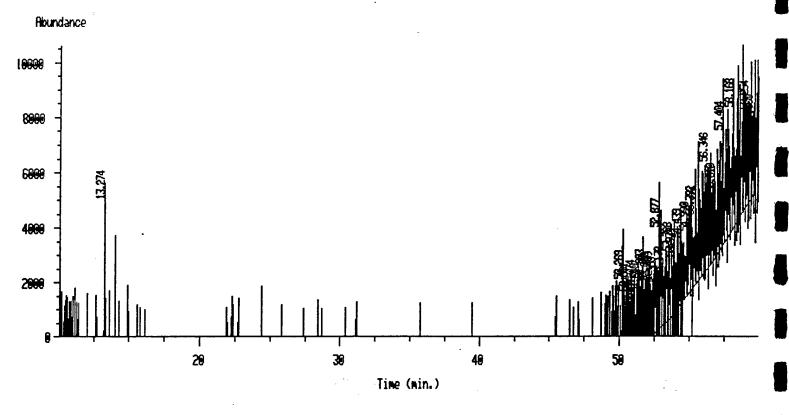
*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***

Run: 13

November 10, 1995





Information from Current Data File Header: File: /chem/msd.i/air/Air1201012.d

Operator: Kelly Davis

Date Acquired: Wed Nov 08 95 06:28:34 PM

Sample Name: Sample 9

Misc Info:

Sequence Index: 1

Bottle Number: 12

Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

Default Multiplier: 1

	ak	Int.		Signal	Compound		
Num	Туре	Type	Time	Description	Name	Area	Amount
1 2 3 4 5 6 7			- - - - - -	Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion	1,2-DiMe Naphthalene 2,3,5-TriMe Naphthal	-Not Found- -Not Found- -Not Found- -Not Found- -Not Found- -Not Found-	
8 9 10 11 12 13 14 15 16 17				Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion Total Ion	Hexadecane Fluorene 4,4'-DiMe Biphenyl 1-Me Fluorene Phenanthrene Anthracene 2-Me Phenanthrene 9-Me Anthracene 3,6-DiMe Phenanthren	-Not Found- -Not Found- -Not Found- -Not Found- -Not Found- -Not Found- -Not Found- -Not Found-	

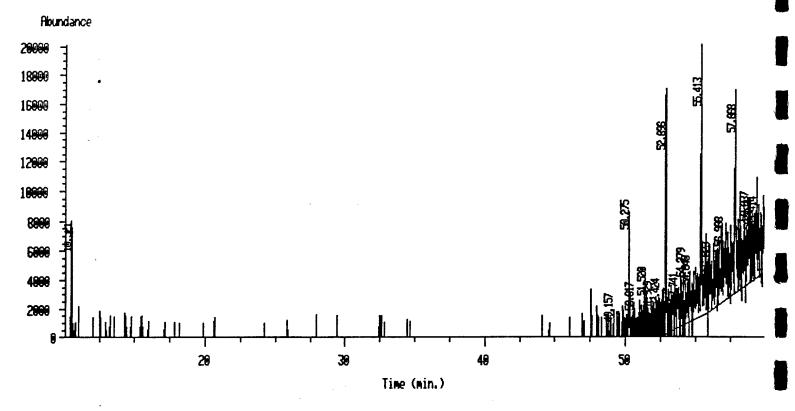
*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***

Run: 12

November 10, 1995





Sequence: /chem/msd/air.s Vial: 11 Injection: 1

External Standard Report

Information from Current Data File Header:
 File: /chem/msd.i/air/Air1101011.d

Operator: Kelly Davis

Date Acquired: Wed Nov 08 95 05:21:18 PM

Sample Name: Sample 8

Misc Info:

Sequence Index: 1 Bottle Number: 11 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

Default Multiplier: 1

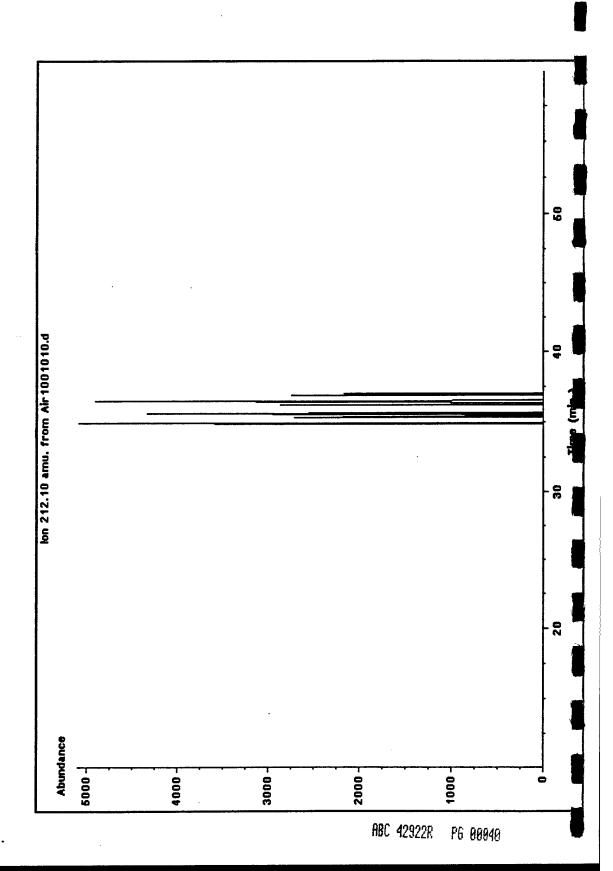
Pe Num	ak Type	Int. Type	Ret.	Signal Description	Compound Name	1 man	3
•	-1100	TIPC	1200	Description	Name	Area	Amount
1				Total Ion	2-Me Quinoline	-Not Found-	***************************************
2			-	Total Ion	6-Me Quinoline	-Not Found-	
3			-	Total Ion	Biphenyl	-Not Found-	
4			_	Total Ion	2,6-DiMe Naphthalene	-Not Found-	
5			-	Total Ion		-Not Found-	
6			-	Total Ion		-Not Found-	
7			-	Total Ion	2,3,5-TriMe Naphthal	-Not Found-	
8			_	Total Ion	Hexadecane	-Not Found-	
9			-	Total Ion	Fluorene	-Not Found-	
10			-	Total Ion	4,4'-DiMe Biphenyl	-Not Found-	
11			-	Total Ion	1-Me Fluorene	-Not Found-	
12			-	Total Ion	Phenanthrene	-Not Found-	
13			-	Total Ion	Anthracene	-Not Found-	
14				Total Ion	2-Me Phenanthrene	-Not Found-	
15			-	Total Ion	9-Me Anthracene	-Not Found-	
16			-	Total Ion	3,6-DiMe Phenanthren	-Not Found-	
17			-	Total Ion	2-Eth Anthracene	-Not Found-	
18			-	Total Ion	9,10-DiMe Anthracene	-Not Found-	

*** REPORT ERRORS ***

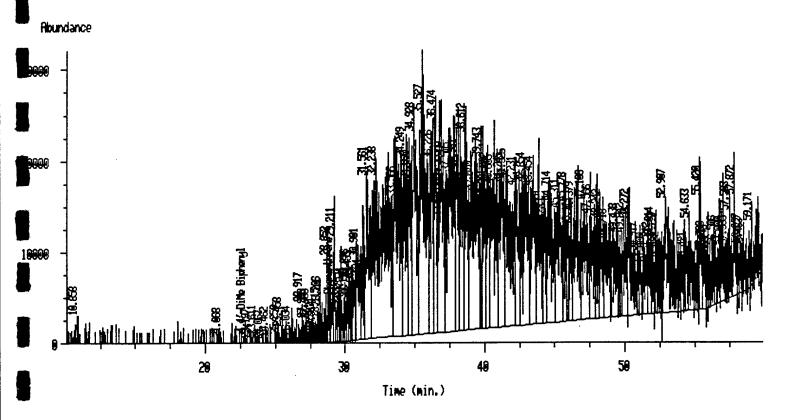
*** Not All Calibrated Peaks Found ***

Run: 11

November 10, 1995







Sequence: /chem/msd/air.s Vial: 10 Injection: 1

External Standard Report

Information from Current Data File Header: File: /chem/msd.i/air/Air1001010.d

Operator: Kelly Davis

Date Acquired: Wed Nov 08 95 04:18:52 PM

Sample Name: Sample 7

Misc Info:

Sequence Index: 1 Bottle Number: 10 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

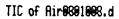
Default Multiplier: 1

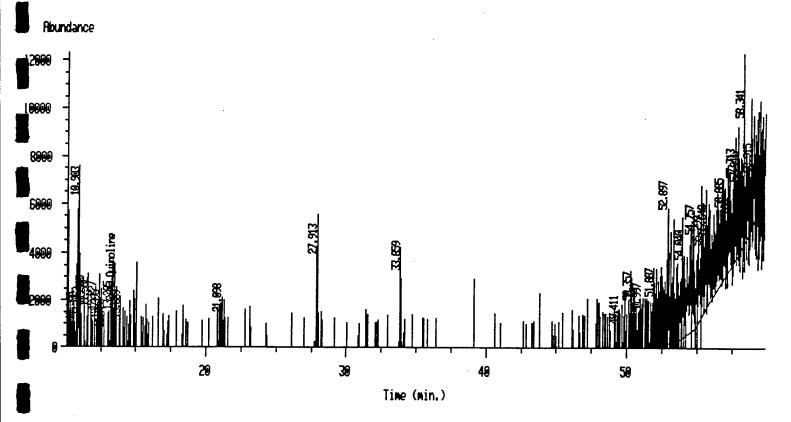
	eak Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1				Total Ion	2-Me Quinoline	-Not Found-	
2			_	Total Ion	6-Me Quinoline	-Not Found-	
3			_	Total Ion	Biphenyl	-Not Found-	
4			-	Total Ion	2,6-DiMe Naphthalene	-Not Found-	
5			_	Total Ion	1,3-DiMe Naphthalene	-Not Found-	
6			-	Total Ion	1,2-DiMe Naphthalene	-Not Found-	
7			_	Total Ion	2,3,5-TriMe Naphthal	-Not Found-	
			_	Total Ion	Hexadecane	-Not Found-	
8 9			_	Total Ion	Fluorene	-Not Found-	
10		BH	22.856	Total Ion	4,4'-DiMe Biphenyl	45226	
11			_	Total Ion	1-Me Fluorene	-Not Found-	
12	•	vv	29.088	Total Ion	Phenanthrene	386973	
13		• •	_	Total Ion	Anthracene	-Not Found-	
14			_	Total Ion	2-Me Phenanthrene	-Not Found-	
15			-	Total Ion	9-Me Anthracene	-Not Found-	
16	٠.		_	Total Ion	3,6-DiMe Phenanthren	-Not Found-	
17	4	vv	36.903	Total Ion	2-Eth Anthracene	4765229	0.5020 ng/ul
18		- •	-	Total Ion	9,10-DiMe Anthracene	-Not Found-	•

*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***

Run: 10 November 10, 1995





Sequence:

Injection: 1

External Standard Report

Information from Current Data File Header:

File: /chem/msd.i/air/Air0801008.d

Operator:

Date Acquired: Wed Nov 08 95 02:04:43 PM

Sample Name: Sample 6

Misc Info:

Bottle Number: 8 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

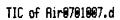
Uncalib. Peak Response Factor: 0

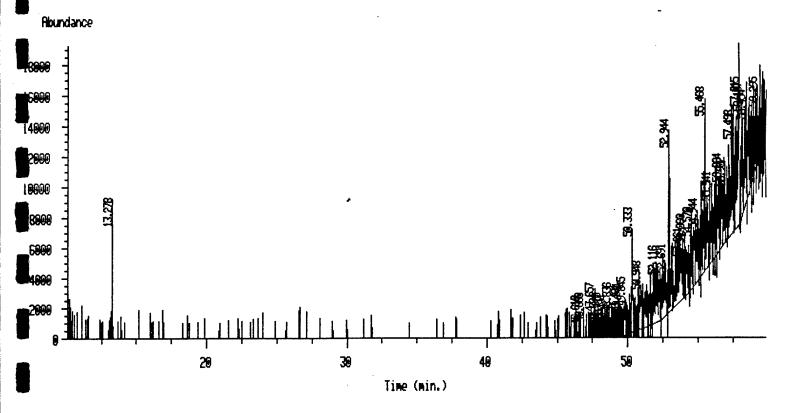
Default Multiplier: 1

Peak Num Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1	PH	13.488	Total Ion	2-Me Quinoline	62457	
2		_	Total Ion	6-Me Quinoline	-Not Found-	
3		_	Total Ion	Biphenyl	-Not Found-	
4		-	Total Ion	2,6-DiMe Naphthalene		
5		-	Total Ion	1,3-DiMe Naphthalene	-Not Found-	
6		_	Total Ion	1,2-DiMe Naphthalene		
7		_	Total Ion	2,3,5-TriMe Naphthal	-Not Found-	
8		_	Total Ion	Hexadecane	-Not Found-	
9		_	Total Ion	Fluorene	-Not Found-	
10		_	Total Ion	4,4'-DiMe Biphenyl	-Not Found-	
11		-	Total Ion	1-Me Fluorene	-Not Found-	
12		_	Total Ion	Phenanthrene	-Not Found-	
13		-	Total Ion	Anthracene	-Not Found-	
14		-	Total Ion	2-Me Phenanthrene	-Not Found-	
15		-	Total Ion	9-Me Anthracene	-Not Found-	
16		-	Total Ion	3,6-DiMe Phenanthren	-Not Found-	
17		-	Total Ion	2-Eth Anthracene	-Not Found-	
18		-	Total Ion	9,10-DiMe Anthracene	-Not Found-	

*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***





Information from Current Data File Header:

File: /chem/msd.i/air/Air0701007.d

Operator: Tim E. Spurgeon

Date Acquired: Tue Nov 07 95 11:24:57 PM

Sample Name: Sample 5

Misc Info:

Bottle Number: 7 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

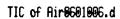
Default Multiplier: 1

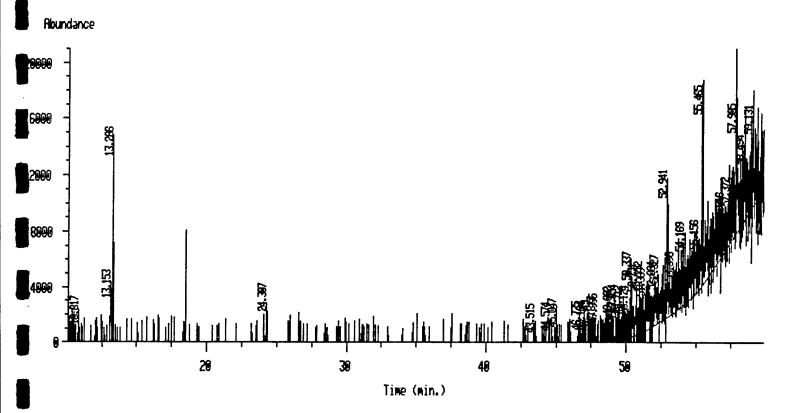
Pe Num	ak Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1			_	Total Ion	2-Me Quinoline	-Not Found-	
2			_	Total Ion	6-Me Quinoline	-Not Found-	
3			_	Total Ion	Biphenyl	-Not Found-	
			_	Total Ion	2,6-DiMe Naphthalene	-Not Found-	
4 5			-	Total Ion	1,3-DiMe Naphthalene	-Not Found-	
6			_	Total Ion	1,2-DiMe Naphthalene	-Not Found-	
7			_	Total Ion	2,3,5-TriMe Naphthal	-Not Found-	
			-	Total Ion	Hexadecane	-Not Found-	
8 9			_	Total Ion	Fluorene	-Not Found-	
10			_	Total Ion	4,4'-DiMe Biphenyl	-Not Found-	
11			_	Total Ion	1-Me Fluorene	-Not Found-	
12			_	Total Ion	Phenanthrene	-Not Found-	
13			_	Total Ion	Anthracene	-Not Found-	
14			_	Total Ion	2-Me Phenanthrene	-Not Found-	
15			_	Total Ion	9-Me Anthracene	-Not Found-	
16			_	Total Ion	3,6-DiMe Phenanthren	-Not Found-	
17			_	Total Ion	2-Eth Anthracene	-Not Found-	
18			-	Total Ion	9,10-DiMe Anthracene	-Not Found-	

*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***

Run: 1 November 10, 1995





Sequence:

Injection: 1

External Standard Report

Information from Current Data File Header:

File: /chem/msd.i/air/Air0601006.d

Operator: Tim E. Spurgeon

Date Acquired: Tue Nov 07 95 10:20:48 PM

Sample Name: Sample 4

Misc Info:

Bottle Number: 6 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

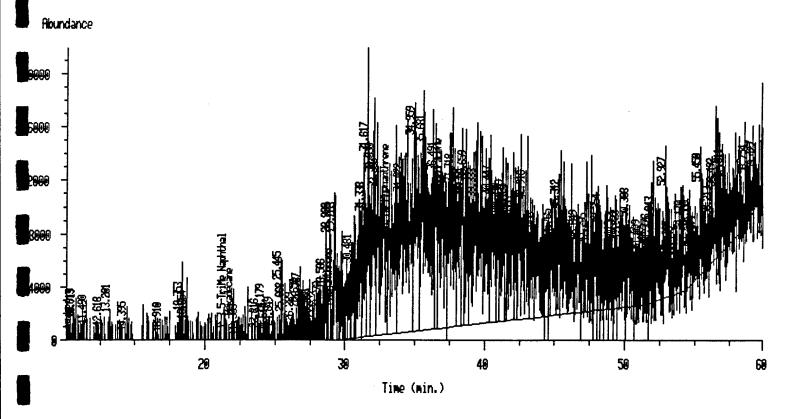
Default Multiplier: 1

Pe Num	ak Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1	***		_	Total Ion	2-Me Quinoline	-Not Found-	
2			_	Total Ion	6-Me Quinoline	-Not Found-	
3				Total Ion	Biphenyl	-Not Found-	
4			-	Total Ion	2,6-DiMe Naphthalene	-Not Found-	
5			_	Total Ion	1,3-DiMe Naphthalene	-Not Found-	
6			_	Total Ion	1,2-DiMe Naphthalene	-Not Found-	
7			_	Total Ion	2,3,5-TriMe Naphthal	-Not Found-	
8			_	Total Ion	Hexadecane	-Not Found-	
9			-	Total Ion	Fluorene	-Not Found-	
10			_	Total Ion	4,4'-DiMe Biphenyl	-Not Found-	
11			-	Total Ion	1-Me Fluorene	-Not Found-	
12			-	Total Ion	Phenanthrene	-Not Found-	
13			-	Total Ion	Anthracene	-Not Found-	
14			-	Total Ion	2-Me Phenanthrene	-Not Found-	
15			-	Total Ion	9-Me Anthracene	-Not Found-	
16			-	Total Ion	3,6-DiMe Phenanthren	-Not Found-	
17			_	Total Ion	2-Eth Anthracene	-Not Found-	
18			-	Total Ion	9,10-DiMe Anthracene	-Not Found-	

*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***





Information from Current Data File Header:

File: /chem/msd.i/air/Air0501005.d Operator: Kelly Davis

Date Acquired: Tue Nov 07 95 09:04:51 PM

Sample Name: Sample 3

Misc Info:

Bottle Number: 5 Sequence Index: 1

Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

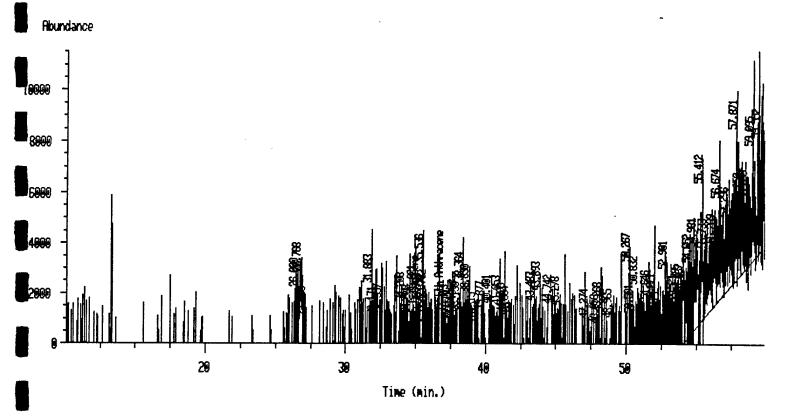
Default Multiplier: 1

	eak Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1			_	Total Ion	2-Me Quinoline	-Not Found-	
2			_	Total Ion	6-Me Quinoline	-Not Found-	
3			_	Total Ion	Biphenyl	-Not Found-	
4			_	Total Ion	2,6-DiMe Naphthalene		
5			_	Total Ion	1,3-DiMe Naphthalene		
6			_	Total Ion	1,2-DiMe Naphthalene		
7		PH	21.487	Total Ion	2,3,5-TriMe Naphthal	101435	
		PH	21.988		Hexadecane	63197	
8 9			-	Total Ion	Fluorene	-Not Found-	
10			-	Total Ion	4,4'-DiMe Biphenyl	-Not Found-	
11			_	Total Ion	1-Me Fluorene	-Not Found-	
12		VH	29.097	Total Ion	Phenanthrene	139966	
13			-	Total Ion	Anthracene	-Not Found-	_
14		VV	33.136	Total Ion	2-Me Phenanthrene	3011993	0.1639 ng/ul
15			_	Total Ion	9-Me Anthracene	-Not Found-	
16			_	Total Ion	3,6-DiMe Phenanthren		
17		VV	36.884	Total Ion	2-Eth Anthracene		0.2571 ng/ul
18			_	Total Ion	9,10-DiMe Anthracene	-Not Found-	

*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***





Information from Current Data File Header: File: /chem/msd.i/air/Air0401004.d

Operator: Kelly Davis

Date Acquired: Tue Nov 07 95 04:10:17 PM

Sample Name: Sample 2

Misc Info:

Run: 4

Sequence Index: 1 Bottle Number: 4 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

> Default Sample Amount: 0 Uncalib. Peak Response Factor: 0

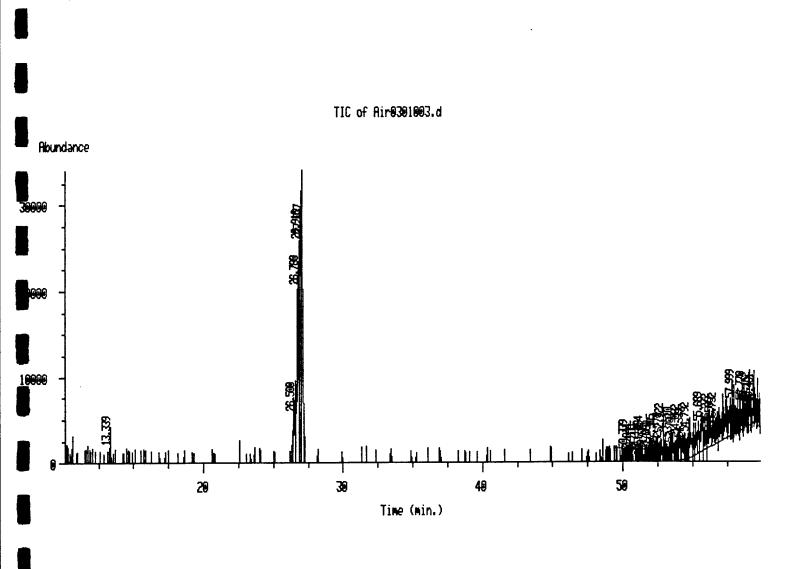
Default Multiplier: 1

Peak Num Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1		_	Total Ion	2-Me Quinoline	-Not Found-	
2		-	Total Ion	6-Me Quinoline	-Not Found-	
3		-	Total Ion	Biphenyl	-Not Found-	
4		-	Total Ion	2,6-DiMe Naphthalene	-Not Found-	
5		-	Total Ion	1,3-DiMe Naphthalene	-Not Found-	
6		_	Total Ion	1,2-DiMe Naphthalene	-Not Found-	
7		_	Total Ion	2,3,5-TriMe Naphthal	-Not Found-	
8 9		_	Total Ion	Hexadecane	-Not Found-	
9		_	Total Ion	Fluorene	-Not Found-	
10		_	Total Ion	4,4'-DiMe Biphenyl	-Not Found-	
11		_	Total Ion	1-Me Fluorene	-Not Found-	
12		_	Total Ion	Phenanthrene	-Not Found-	
13		_	Total Ion	Anthracene	-Not Found-	
14		_	Total Ion	2-Me Phenanthrene	-Not Found-	
15	PH	35.184	Total Ion	9-Me Anthracene	25572	
16		-	Total Ion	3,6-DiMe Phenanthren	-Not Found-	
17	BH	36.954	Total Ion	2-Eth Anthracene	82457	
18		-	Total Ion	9,10-DiMe Anthracene	-Not Found-	

*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***

November 10, 1995



Information from Current Data File Header:

File: /chem/msd.i/air/Air0301003.d

Operator: Kelly Davis

Date Acquired: Tue Nov 07 95 03:06:47 PM

Sample Name: Sample 1

Misc Info:

Sequence Index: 1 Bottle Number: 3 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

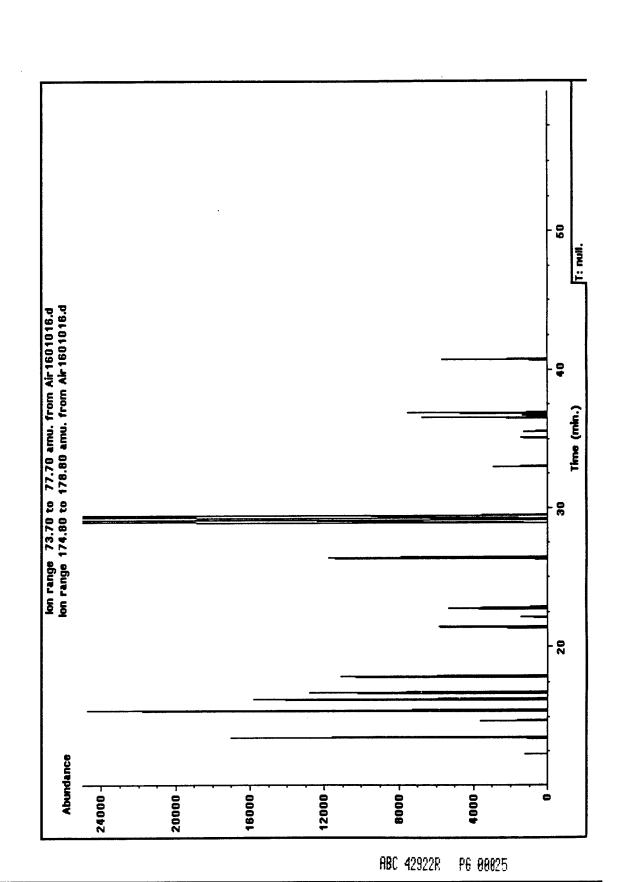
Default Multiplier: 1

Pe Num	ak Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1			-	Total Ion	2-Me Quinoline	-Not Found-	
2			_	Total Ion	6-Me Quinoline	-Not Found-	
3			-	Total Ion	Biphenyl	-Not Found-	
4			-	Total Ion	2,6-DiMe Naphthalene	-Not Found-	
5			_	Total Ion	1,3-DiMe Naphthalene	-Not Found-	
6			_	Total Ion	1,2-DiMe Naphthalene	-Not Found-	
7			-	Total Ion	2,3,5-TriMe Naphthal	-Not Found-	
8			-	Total Ion	Hexadecane	-Not Found-	
8 9			-	Total Ion	Fluorene	-Not Found-	
10			-	Total Ion	4,4'-DiMe Biphenyl	-Not Found-	
11			-	Total Ion	1-Me Fluorene	-Not Found-	
12			-	Total Ion	Phenanthrene	-Not Found-	
13			-	Total Ion	Anthracene	-Not Found-	
14			-	Total Ion	2-Me Phenanthrene	-Not Found-	
15			-	Total Ion	9-Me Anthracene	-Not Found-	
16			-	Total Ion	3,6-DiMe Phenanthren	-Not Found-	
17			_	Total Ion	2-Eth Anthracene	-Not Found-	
18			-	Total Ion	9,10-DiMe Anthracene	-Not Found-	

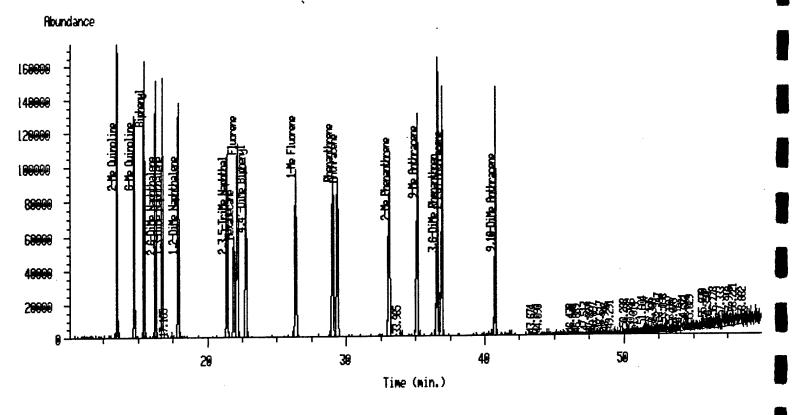
*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***

Run: 3 November 10, 1995







Sequence: /chem/msd/air.s Vial: 16 Injection: 1

External Standard Report

Information from Current Data File Header: File: /chem/msd.i/air/Air1601016.d

Operator: Kelly Davis

Date Acquired: Wed Nov 08 95 10:58:03 PM

Sample Name: 1 ug/mL PAH's

Misc Info:

Sequence Index: 1 Bottle Number: 16 Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

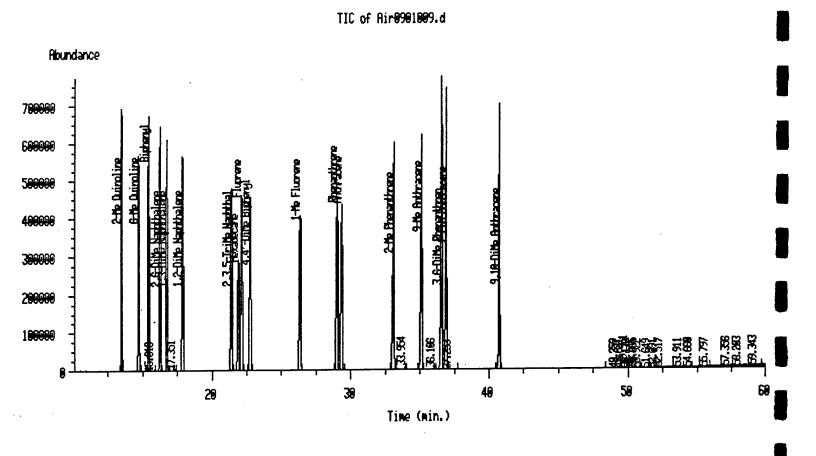
Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

Default Multiplier: 1

Peak Num Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1	BH	13.472	Total Ion	2-Me Quinoline	6275026	1.085 ng/ul
2	BH	14.699	Total Ion	6-Me Quinoline	6045579	1.082 ng/ul
3	BH	15.416	Total Ion	Biphenyl	8690902	1.152 ng/ul
4	PH	16.235	Total Ion	2,6-DiMe Naphthalene	8329952	1.098 ng/ul
5	PH	16.731	Total Ion	1,3-DiMe Naphthalene	8468326	1.113 ng/ul
6	BH	17.867	Total Ion	1,2-DiMe Naphthalene	8050029	1.090 ng/ul
7	BH	21.378	Total Ion	2,3,5-TriMe Naphthal	7767064	1.058 ng/ul
8	PH	21.862	Total Ion	Hexadecane	4800835	1.072 ng/ul
9	PH	22.122	Total Ion	Fluorene	8068735	1.127 ng/ul
10	BH	22.736	Total Ion	4,4'-DiMe Biphenyl	7858848	1.078 ng/ul
11	BH	26.337	Total Ion	1-Me Fluorene	7597842	1.086 ng/ul
12	BH	29.016	Total Ion	Phenanthrene	8044782	1.041 ng/ul
13	PH	29.343	Total Ion	Anthracene	7785419	1.070 ng/ul
14	BH	33.120	Total Ion	2-Me Phenanthrene	8289202	1.089 ng/ul
15	BH	35.135	Total Ion	9-Me Anthracene	8341067	1.116 ng/ul
16	BH	36.590	Total Ion	3,6-DiMe Phenanthren	8799042	1.077 ng/ul
17	PH	36.915	Total Ion	2-Eth Anthracene	8001117	1.066 ng/ul
18	BH	40.754	Total Ion	9,10-DiMe Anthracene	6464744	1.064 ng/ul

Run: 16



Information from Current Data File Header:

File: /chem/msd.i/air/Air0901009.d

Operator:

Date Acquired: Wed Nov 08 95 03:08:54 PM

Sample Name: 5 ug/mL PAH's

Misc Info:

Bottle Number: 9 Repetition Number: 1

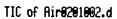
Fog Oil PAH's

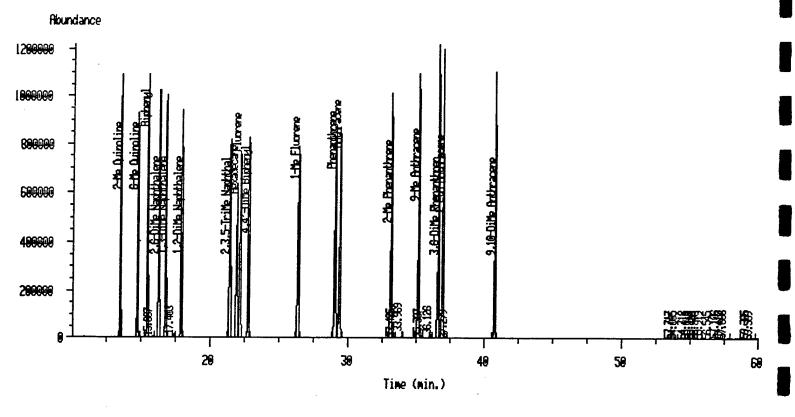
Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

> Default Sample Amount: 0 Uncalib. Peak Response Factor: 0 Default Multiplier: 1

Peak Num Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1	BH	13.473	Total Ion	2-Me Quinoline	27651933	5.844 ng/ul
2	BH	14.697	Total Ion	6-Me Quinoline	26817396	5.684 ng/ul
3	BH	15.416	Total Ion	Biphenyl	35299679	5.874 ng/ul
4	PH	16.234	Total Ion	2,6-DiMe Naphthalene	35693094	5.910 ng/ul
5	PH	16.727	Total Ion	1,3-DiMe Naphthalene	36092132	5.931 ng/ul
6	PH	17.868	Total Ion	1,2-DiMe Naphthalene	35563337	5.968 ng/ul
7	BH	21.378	Total Ion	2,3,5-TriMe Naphthal	36078888	5.858 ng/ul
8	PH	21.896	Total Ion	Hexadecane	21859178	5.754 ng/ul
9	VH	22.123	Total Ion	Fluorene	33814866	5.852 ng/ul
10	BH	22.735	Total Ion	4,4'-DiMe Biphenyl	35710446	5.899 ng/ul
11	BH	26.346	Total Ion	1-Me Fluorene	34320457	5.968 ng/ul
12	BH	29.019	Total Ion	Phenanthrene	37470690	5.905 ng/ul
13	VH	29.356	Total Ion	Anthracene	35587766	5.979 ng/ul
14	BH	33.106	Total Ion	2-Me Phenanthrene	37537989	6.216 ng/ul
15	BH	35.123	Total Ion	9-Me Anthracene	36724801	6.209 ng/ul
16	PH	36.578	Total Ion	3,6-DiMe Phenanthren	40551423	6.334 ng/ul
17	PH	36.904	Total Ion	2-Eth Anthracene	37497950	6.203 ng/ul
18	BH	40.742	Total Ion	9,10-DiMe Anthracene	30606972	6.060 ng/ul





Sequence: Vial: 2 Injection: 1

External Standard Report

Information from Current Data File Header: File: /chem/msd.i/air/Air0201002.d

Operator: Kelly Davis

Date Acquired: Tue Nov 07 95 12:25:36 PM

Sample Name: 10 ug/mL PAH's

Misc Info:

Sequence Index: 1

Bottle Number: 2

Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

Default Sample Amount: 0

Uncalib. Peak Response Factor: 0

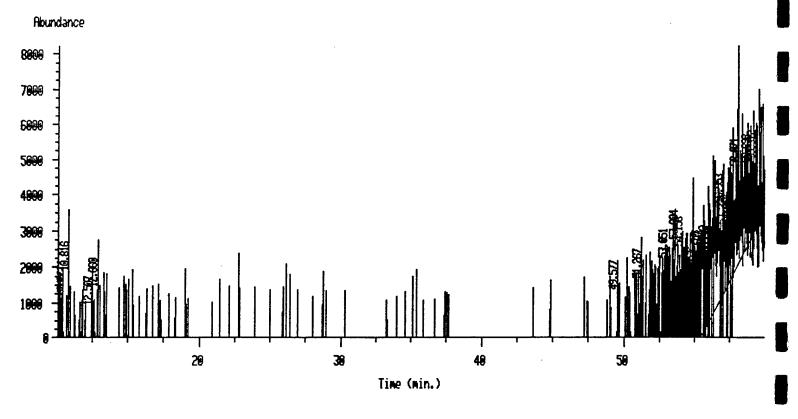
Default Multiplier: 1

Peak Num Type	Int. Type	Ret. Time	Signal Description	Compound Name	Area	Amount
1	BH	13.522	Total Ion	2-Me Quinoline	44429406	9.579 ng/ul
2	BH	14.748	Total Ion	6-Me Quinoline	44751531	9.657 ng/ul
3	BH	15.468	Total Ion	Biphenyl	56051390	9.557 ng/ul
4	PH	16.288	Total Ion	2,6-DiMe Naphthalene	56360816	9.544 ng/ul
5	PH	16.784	Total Ion	1,3-DiMe Naphthalene	56743607	9.534 ng/ul
6	PH	17.920	Total Ion	1,2-DiMe Naphthalene	55588808	9.519 ng/ul
7	BH	21.433	Total Ion	2,3,5-TriMe Naphthal	58007231	9.577 ng/ul
8	PH	21.928	Total Ion	Hexadecane	35957870	9.624 ng/ul
9	PH	22.177	Total Ion	Fluorene	54080548	9.572 ng/ul
10	BH	22.789	Total Ion	4,4'-DiMe Biphenyl	56827341	9.555 ng/ul
11	BH	26.399	Total Ion	1-Me Fluorene	53776980	9.523 ng/ul
12	BH	29.064	Total Ion	Phenanthrene	59543396	9.554 ng/ul
13	VH	29.404	Total Ion	Anthracene	55618119	9.516 ng/ul
14	BH	33.139	Total Ion	2-Me Phenanthrene	55697534	9.400 ng/ul
15	BH	35.154	Total Ion	9-Me Anthracene	54516933	9.402 ng/ul
16	PH	36.607	Total Ion	3,6-DiMe Phenanthren	58728112	9.344 ng/ul
17	VH	36.936	Total Ion	2-Eth Anthracene	55904252	9.408 ng/ul
18	BH	40.768	Total Ion	9,10-DiMe Anthracene	47112365	9.476 ng/ul

Run: 2

November 10, 1995





External Standard Report

Information from Current Data File Header: File: /chem/msd.i/air/Air0101001.d

Operator: Kelly Davis

Date Acquired: Tue Nov 07 95 11:22:54 AM

Sample Name: Acetone Blank

Misc Info:

Sequence Index: 1

Bottle Number: 1

Repetition Number: 1

Fog Oil PAH's

Calibration Table Last Updated: Fri Nov 10 13:39:41 1995

Reference Peak Window: 0.200 Absolute Minutes Non-reference Peak Window: 0.200 Absolute Minutes

> Default Sample Amount: 0 Uncalib. Peak Response Factor: 0 Default Multiplier: 1

	ak	Int.	Ret.	Signal	Compound		
Num	Type	Туре	Time	Description	Name	Area	Amount
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				Total Ion Total Ion	2-Me Quinoline 6-Me Quinoline Biphenyl 2,6-DiMe Naphthalene 1,3-DiMe Naphthalene 1,2-DiMe Naphthalene 2,3,5-TriMe Naphthal Hexadecane Fluorene 4,4'-DiMe Biphenyl 1-Me Fluorene Phenanthrene Anthracene 2-Me Phenanthrene 9-Me Anthracene 3,6-DiMe Phenanthren	-Not FoundNot Found-	Amount
17 18			-	Total Ion Total Ion	2-Eth Anthracene 9,10-DiMe Anthracene	-Not Found- -Not Found-	

*** REPORT ERRORS ***

*** Not All Calibrated Peaks Found ***

Sequence Parameters:

Operator Name: Kelly Davis

Parts of methods to be run: full method

What to do on a barcode mismatch: inject anyway

Data File Prefix: Air Start Run Counter at: 17

Directory for Data Files: /chem/msd.i/air

Directories for Method Files:

/chem/msd.i

Pre-Sequence Command: Post-Sequence Command: Sequence Comment:

Sequence Table:

Seq. From $\mathbf{o}\mathbf{r}$ Inj/ Calib Line Method Name Vial Vial Vial Line 17 1 FogOil.m 19 1

Sample Table:

9 10 11 12 13 14 15 16 17	Sample 10 Sample 11 Sample 12 1 ug/mL PAH's 0.5 ug/mL	Sample Amount	Multiplier	Internal Std Amount
18	10 % Fog Oil			
19	0.1 ug/mL			

T COPY O 7200 E. ABC Lane, Columbia, MO 65202 Tel: 314/474-8579 Fax: 314/443-9033 200 10-5-95 4:38PM 2 1996 AN EXACT Laboratories, Inc. ASCORBIC ACID AS HOW PRESERVATIVE: Company Name H2SQ4 300C HN03 HIST IS A 오 REQUESTED ANALYSES TTCC 젊 30/ 200 Molsture POR CAM METALS: HIGHLEVELS? FLAMMABLE? **EXPLOSIVE?** ARB SAMPLES: TOXIC STLC TPH-DIESEL ANGELA SCHMIDT Pezold TPH-GAS/BTEX Printed Name Containers Angela Schnidt before performing No. of Report Attention: ANGELA SCHMIDT % Macthe Sample Type 9-Soll, L.Liquid ALL SUDGS, and いらればな 0 Q REPORT INFORMATION 0 3 0 0 0 3 CHAIN-OF-CUSTODY FORM LINCINNATI OHIO 45233 Project Name: FMC- FDG-OI temp:= 30°C 84 84 89 PB 6 8 Location/Depth emp=32°C 23% 320 23°C 320 23°C Time 95 Project Manager: = = Copy To: N/A Project, P.O. #: lehele Maintenan 10-5-95 OF S vocs identified 56-4-01 Sociational R-196 (M157 Sample 30 yands (AF Sombole 20 Jands (AF rom uni AF. Client Sample Description Date 10 Vards Fromuni 32, 3D/ENVIRONMENTAL ON Geherator Unit r cossiple. Background 24 or A Soundle Ichards (209) 675-0909 • (000) 846-0008 • FAX (200) 675-0884 Tim Spurgem 20 hards KOAL CUSTOMER INFORMATION Sackbrown Please contact any analysis -32380 Avenue 10 - Madera, California 93638 -922 -9150 moisture, Sampler: 7 Comments: Ineed 455 455 1325 1020 1028 1330 エグク Sampled 0.285 0.285 0.285 1330 Time Customer Name: City, State, Zip: 種 10-245 10-3-45 10-3-45 0-3-45 0-3-45 10-2-95 5-2-45 るなれ 10-0-95 10-2-95 Sampled 102.95 マダカ Address: Date hone: .# x8. Standard Turnaround (TPH, LUFT Samples - 5 Days) -24A-(xm56) km2v. x m56/ 2-24A - Km52) (m150) [M157 m157 M(57 Received for Laboratory By: 7-RS6 (MX7 ABC/Pan-Ag Labs Job #; (m.57 Mes 1 m157 Rush 5 Day Rush 3 Day Rush 2 Day Rush 1 Day leceived By: 72 Att Date Entered on LIMS: urparound Time: (10 Working Days) Lab Sample I.D.# **RUSH JOB** . B 15 · R56 Juny G 3-24B elinquished By: - 24A -R56 9 · VMF elinquished By to VMF 1 VMC eceived By: Age

PLEASE CALL THE NUMBERS LISTED ABOVE FOR COMMENTS, QUESTIONS, AND QUOTATIONS. THANK YOU FOR YOUR CONTINUED PATRONAGE.

		PREPARAT	PREPARATION OF FINAL WORKING STANDARD COLLINGONS	DRKING STANDAL	STOREST TON CO		
Compound(s)	Compound(s) Hexachloroethane	sthane		Primary Std. #(s)	NOTIONS (S		
Solutio 1. 11919	Solution Number	Parent Solution Number B	Conc. of Parent Solution 10.0 well m	Aliquot Volume (mL) 5.00		Dilution Solvent Acetone	Final Conc.
2. %. 4	ָּה הַ	 		00.10	\Rightarrow		0.100 mg/m1
s. 14a198.	H	, , , d	0.100 mg/m	5.00 0.300@	00	Tso Octore	0.030 mg/m
7. 89. 0	, X	H. #	0.005 m	0.01	+		0.0005 w/m 0
7.				THE ORIGINAL "DOCUMENT"	COPY OF		
11. 8. 12. © Xe	© X6 28 54015			FTB 5 1988	6		
Comments:	This dilution was added on 38 sap 95, the expiration date is	seaded on 33	15005, +126.00	1600y V. (· 53	Dilution Solvent	Lot Number
Dilutions by:	76 00, 9.	Thank	Date:	Date: 1351095		Condition/and L	Actore Storage Condition/and Location: Refrigerede MATID: 1625-635
Approved by:	7600g 7.	d the Mi	Date:	30 702 96	Expiration:	on: 8/21/94	و

	PREPARAT	PREPARATION OF FINAL WORKING STANDARD SOLUTIONS	ORKING STANDA	RD SOLUTIONS		
Compound(s) Heyschkroethane	n.e.		Primary Std. #(s)	s) WA		
Solution Number	Parent Solution Number	Conc. of Parent Solution	Aliquot Volume (mL)	Dilution Volume (mL)	Dilution Solvent	Final Conc.
1. 1619B CB"	14198	JulguOCEN	83.0	8/	in colane	1000 col
2. "B"	" A "	/000/	00%			70.0 Mg /m C
3. C.1	, B.	70.0	00/			0.100
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s	, O	0.100	10.0	\rightarrow	7	O.Oloo Malme
6.						0
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10.		THIS" IS AN EXACT COPY OF THE ORIGINAL "DOCUMENT"	OCUMENT"			
11.		E 5	-5 1996			
12.						
Comments:		IN TOWNS AND		Dilutio	Dilution Solvent	N. s. J.
				J-change	מייב	hes to
Dilutions by: 2/000, 7.	our,	Date:	Date: 21 Aug 95	Storage	Storage Condition/and Location:	ocation:
Checked by: Sanum Ch	Trent	Date:	Date: 30 Jan 94		ر ا ا	
Approved by: 7600, 1.	Dock	Date:	Date: 30 Jan 96	Expiration:	ion: 813/19c	J
ABC Laboratories Iso. Form AC-13 (04-05-94)						

ABC Laboratories, Inc.

PREPARATION OF CONCENTRATED STOCK STANDARDS						
No.: 16198 Con	No.: 16198 Compound: Heyachloroethane					
Primary Standard No.: NA Lot No.: OG203HF Purity: 99%						
Final Gross Wt.: 65,3917 g Dilution Volume: 100 ml						
Tare Wt.: 65.18700 g Dilution Solvent: i. octave						
Net Wt.: 0, 1217 g Concentration: 1.20 mg lm L						
Adj. Net Wt.: <u>\8</u> c						
Balance Check Material I.D. No.: 1714-145A						
Class S. Weight Added	Before After Standard Weighing Standard Weighing					
<u>/00</u> 9	100,0015 9 100.00H "THIS" IS AN EXACT COPY OF THE ORIGINAL "DOCUMENT"					
<u>/co g + o/ g</u>	100.1016 g 100.1014 g FEB 5 1996					
g	2000 g 1999 g					
<u>O.1</u> g	0.1001 g 0.0999 g					
Solution Information						
Expiration Date: ৪-১৮৭ ሬ						
Storage Instructions: ٥-६°८						
Storage Unit Material Control Number:						
Comments: OO KA 8	2-21-75 @ Three significant figures are used in calculations					
	are given for purity. 1100 8-21-95					
SP-30-96	·					
Prepared by: 1600, 1	Date: 821 95					
Checked by: Joann						
Lab Form No.: 164a (04						

	PREPARAT	ARATION OF FINAL WORKING STANDARD SOLUTIONS	ORKING STANDA	RD SOLUTION:		
Compound(s) Vories			Primary Std. #(s)	(s) A A		
Solution Number	Parent Solution Number	c. of Soluti	Aliquot Volume (mL)	on (mL)	Dilution Solvent	j
ה ה	A	20.00 00 00 00 00 00 00 00 00 00 00 00 00	0.0	0	Tso-odare	3 8 8
3. 6	A	->	1.00			0.50 8/ml
4	B	10.0 Um	8		\rightarrow	
م	A	50.0 July	30.0		Acetone	4
, T	4		8			72
7. II	14	10.0 mg	1.00	>	->	0.10 8/ml
· **	THIS" IS	HIS" IS AN EXACT COPY OF HE ORIGINAL "DOCUMENT"	4.5			
.6		FEB 5 1998				
10. This dilution (ins achier	5 00 87 (400)	16.00.7. Org.	exological	date is	1. 38 A Or	expiration date is this 32 h Or. Tre 21 A 95
12.					0	
Comments: DE JG 30 A W QS	5000			Dilutic	Dilution Solvent	Lot Number
Dilutions by:	Shant) Date:	Date: 22 30 Aug 9	Ŋ	Action Isk	SK SK Setion:
Checked by: 76 00, 7	Carri	Date:	30 Jan 9	Refr	igerade mati	Refrigerate matad: 1625-1635
Approved by: 7600, 7.	ندمل	Date:	Date: 30 5an 9	6 Expiration:	tion: 8 /38/94	9
ABC Leboratories Inc. Form IAC-13 (04-06-94)						

Observations and	or Remarks Form
Test Material: Fog Oil Sample Type: Varies ABC Study No.: 42818 Principal	Lab Form No. 72 ABC Laboratories, Inc. 7200 E. ABC Lane Columbia, MO 65202-8015
The 50.0 μg/ml standard (std. mix A) aliquot from each of the 1.0 mg/ml standard (std. mix B) was listed below and adding them to a sing 10.0 μg/ml standard (std. mix B) was from each of the 1.0 mg/ml standard s below and adding them to a single 100 solvent in each flask was Iso-Octane. refrigerator. 2-Methyquinoline 6-Methylquinoline Biphenyl 2,6-Dimethylnapt 1,3-Dimethylnapt 1,2-Dimethylnapt 2,3,5-Trimethylnapt 2,3,5-Trimethylnapt 4,4'-Dimethylbipl	was prepared by taking a 5.0 mL andard solutions of the compounds ale 100-mL volumetric flask. The prepared by taking a 1.0 mL aliquot solutions of the compounds listed 0-mL volumetric flask. The dilution These standards were stored in a chalene shalene apthalene
1-Methylfluorene Phenanthrene Anthracene 2-Methylphenanth 9-Methylanthracene 3,6-Dimethylphen 2-Ethylanthracene 9,10-Dimethylanth	rene ne anthrene THE ORIGINAL "DOCUMENT" FEB 5 1996 BY 1600, 7. Document
Prepared By: Jan Dani Checked By: 1600, 7 Oani	Date: 30 Jan 96

Observ	vations and/or Remarks Form
Test Material: Fog Oil	Lab Form No. 72
Sample Type: <u>Varies</u>	ABC Laboratories, Inc.
ABC Study No.: 42818	7200 E. ABC Lane Columbia, MO 65202-8015
Principal Investigator: <u>Kelly V. Davis</u>	
	Comments
balance, MAT ID# 1714-14 volumetric flask. A correct purity, the final volume, an	vere weighed to four decimal places on an analytical 45A. Each compound was weighed into a separate tion for purity was made. The amount weighed, the ad the solvent used are listed after each compound. for each standard solution is 1.0 mg/ml.
2-Methylquinoline 6-Methylquinoline Biphenyl 2,6-Dimethylnapthalene 1,3-Dimethylnapthalene 1,2-Dimethylnapthalene 2,3,5-Trimethylnapthalene Hexadecane Fluorene 4,4'-Dimethylphene 1-Methylfluorene Phenanthrene Anthracene 2-Methylphenanthrene 9-Methylanthracene 3,6-Dimethylphenanthrene 2-Ethylanthracene 9,10-Dimethylanthracene	(0.1003g, 100%, 100 mL, Iso-Octane) (0.1023g, 98%, 100 mL, Iso-Octane) (0.1003g, 100%, 100 mL, Diethyl Ether) (0.1011g, 99%, 100 mL, Iso-Octane) (0.1043g, 96%, 100 mL, Iso-Octane) (0.1056g, 95%, 100 mL, Iso-Octane) (0.1003g, 100%, 100 mL, Diethyl Ether) (0.1020g, 98%, 100 mL, Iso-Octane) (0.1011g, 99%, 100 mL, Iso-Octane) (0.1011g, 99%, 100 mL, Iso-Octane) (0.1002g, 100%, 100 mL, Iso-Octane) (0.1003g, 100%, 100 mL, Iso-Octane) (0.1056g, 95%, 100 mL, Iso-Octane) (0.1057g, 97%, 50.0 mL, Iso-Octane) (0.1020g, 98%, 100 mL, Iso-Octane) (0.1020g, 98%, 100 mL, Iso-Octane) (0.1010g, 99%, 100 mL, Iso-Octane)
Prepared By:	nt Date: 30 Jan 960
Checked By: No OO Y	Date: 30 Jan 96 Date: 30 Jan 96

Appendix F

Fog Oil Smoke Sample Information and Analysis

FORT MCCLELLAN INSECT COLLECTION DATA

Name:				Date
	ort McClellan: 7322.19			
Collection Location:	County:		State:	Alabama
	Quadrangle:		<u></u>	
	UTM Zone: 16			
	Easting:			_
	Northing:			
Trap Type:				
Trap Deployment Da	ite:	_ Time (military):		
Trap Collection: D	ate:	Time (military):		
Habitat Description:				····
General Weather De	escription During Trapping I	Period:		VA
Sample Number:	Weight c	of insects in sample_		
Time sample placed	on ice for anesthesia: from	nh	1	h
Time sample placed	on dry ice in cooler and se	nt to lab:		h

FORT McCLELLAN WEATHER DATA

Date:	Initials:	Project #: 7322.19
Net location:	County:	
	Quadrangle:	
Site descripti	on:	

Time (2400 h)	Temp (C/F)	Wind Speed	Wind Directio n	Moon Phase	% Cloud Cover	Comments
	-,-					

FORT McCLELLAN TISSUE SAMPLE DATA

Project # 7322.19	Date:	Initials:
Organism:		Type of tissue:
Sample number:		
Description of site w	here orga	ansim was caught:
County:	_	State: Alabama
Site name:		
Capture method:		
Time of capture:		
Weight of organism		
Weight of tissue:		
Length of time on ic	e for anes	sthesis:
		d ion dry ice for shipment to lab
Comments:	-	
	· · · · · · · · · · · · · · · · · · ·	

FORT McCLELLAN NET SITE DESCRIPTION

Project Numb	per: 7322.19	Date:	 	
County:		Name:		
Quad:		Stream/Drainage: _	 	
UTM Zone: _				
	Easting:		 •	
	Northing:		 	
Comments:	C			
STREAM:				
Bank I	Height:			
Chanr	nel Width:			
Stream	n Width:			
Substr	ratum:			
Avera	ge Water Depth:			
Turbid	ity:			
Canop	y Closure:			
VEGETATION	N :			
Domin	ant canopy spec	zies:		
	ge canopy DBH: ant understory s			
	ge understory DI ceous species:	3H:		

FORT M^CCLELLAN BAT CAPTURE DATA

Project numbe Net Location: Quadrangle:	Project number 7322.19 Net Location: County,_ Quadrangle:	,y,	Date:, State:	Alabama	(To make	e commen	Initials: ts on rever	Initials: on reverse, ple Site Name:	(To make comments on reverse, please refer to capture number) Site Name:
Net size: _ Site Desc	Net size:Site Description/Comments:	ments:				Net Number:	Der:		·
Capture No.	Time (military)	Height (m)	Age I	Reprod. Cond.	Weight (g)	RFA Length (mm)	Sex	guano sample taken?	Species
-									

Appendix E

Field Data Sheets

TABLE D-4. Insect orders and amounts caught at Choccolocco reference site.

Black Light	Whi	White Light			Total
Order	Number	Order	Number	Order	Number
Homoptera	~	Homoptera	23	Homoptera	24
Trichoptera	39	Trichoptera	53	Trichoptera	92
Hymenoptera	7	Hymenoptera	0	Hymenoptera	7
Hemiptera	ம	Hemiptera	5	Hemiptera	9
Dermaptera	ო	Dermaptera	0	Dermaptera	က
Lepidoptera	5 6	Lepidoptera	45	Lepidoptera	71
Coleoptera	207	Coleoptera	112	Coleoptera	619
Neuroptera	- -	Neuroptera	~	Neuroptera	7
Psocoptera	0	Psocoptera	0	Psocoptera	0
Orthoptera	_	Orthoptera	τ-	Orthoptera	2
Diptera	18	Diptera	65	Diptera	. 88
Ephemeroptera	ς.	Ephemeroptera	35	Ephemeroptera	40
Total	809		340		948
No. Orders	7		თ		7
				Diversity	7.452064
				Evenness	3.107752

TABLE D-3. Insect orders and amounts caught at Battle Drill Area.

	Black Light		White Light			Total
	Order	Number	Order	Number	Order	Number
	Homoptera	7	Homoptera	က	Homoptera	5
	Trichoptera	31	Trichoptera	80	Trichoptera	36
	Hymenoptera	7	Hymenoptera	0	Hymenoptera	2
	Hemiptera	-	Hemiptera	ဖ	Hemiotera	
	Dermaptera	0	Dermaptera	0	Dermaptera	. 0
	Lepidoptera	14	Lepidoptera	28	Lepidoptera	42
	Coleoptera	55	Coleoptera	25	Coleoptera	! <u>C</u>
	Neuroptera	ო	Neuroptera	0	Neuroptera	} e:
	Psocoptera	0	Psocoptera	0	Psocoptera) C
	Orthoptera	0	Orthoptera	0	Orthoptera	· C
	Diptera	0	Diptera	0	Diptera	· c
	Ephemeroptera	0	Ephemeroptera	-	Ephemeroptera	·
Total		108		71		179
No.		7		့်ဖ		<u></u> 00
Orders)
					Diversity	5.8417
					Evenness	2.8093

TABLE D-2. Insect orders and amounts caught at Range 56.

	Black Light		White Light		Tc	Total	
•	Order	Number	Order	Number	Order	Number	
	Homoptera	0	Homoptera	9	Homoptera	9	
	Trichoptera	တ	Trichoptera	7	Trichoptera	7	
	Hymenoptera	7	Hymenoptera	21	Hymenoptera	32	
	Hemiptera	17	Hemiptera	7	Hemiptera	28	
	Dermaptera	0	Dermaptera	0	Dermaptera	0	
	Lepidoptera	15	Lepidoptera	26	Lepidoptera	71	
	Coleoptera	26	Coleoptera	78	Coleoptera	134	
	Neuroptera	0	Neuroptera	~	Neuroptera	_	
	Psocoptera	0	Psocoptera	0	Psocoptera	0	
	Orthoptera	0	Orthoptera	_	Orthoptera	_	
	Diptera	0	Diptera	က	Diptera	က	
	Ephemeroptera	0	Ephemeroptera	0	Ephemeroptera	0	
Total		108		179		287	
		c)		6		6	
Orders						4000	
					Diversity	2.8871	

TABLE D-1. Insect orders and amounts caught at Range 24 A.

	Black Light		White Light			Total	
	Order	Number	Order	Number	Order	Number	
	Homoptera	2	Homoptera	11	Homoptera	13	
_	l'richoptera	ო	Trichoptera	က	Trichoptera	မှ	
_	Hymenoptera	വ	Hymenoptera	က	Hymenoptera	&	
_	Hemiptera	9	Hemiptera	œ	Hemiptera	18	
U	Jermaptera	7	Dermaptera	0	Dermaptera	7	
_	Lepidoptera	28	Lepidoptera	100	Lepidoptera	128	
J	Coleoptera	47	Coleoptera	4	Coleoptera	91	
2	Neuroptera	0	Neuroptera	2	Neuroptera	7	
u.	Psocoptera	0	Psocoptera	7	Psocoptera	7	
J	Orthoptera	0	Orthoptera	-	Orthoptera	_	
u	Diptera	0	Diptera	4	Diptera	4	
ш	Ephemeroptera	0	Ephemeroptera	0	Ephemeroptera	0	
Total		26		188		285	
No.		7		10		7	
6 D					Diversity	6.3484	•
					Evenness	2.6475	

Appendix D

Insect Analysis and Results

TABLE C-8. Species of trees and shrubs along transect 2 at Choccolocco Creek. Diameter at breast height (dbh), and height of trees are provided.

Species	Transect	dbh (cm)	Height (m)
American Beech	2	18.1	10
American Beech	2	< 1.0	2
American Elm	2	4.3	2
American Elm	2	9.5	5
American Elm	2	6.9	4
American Elm	2	5.8	3
Bitternut Hickory	2	0.5	2
Boxelder	2	1.0	2
Boxelder	2	2.8	3
Boxelder	2	6.9	3
Boxelder	2	1.5	2
Boxelder	2	4.1	2
Boxelder	2	34.2	8
Green Ash	2	1.8	3
Green Ash	2	1.5	2
Green Ash	2	49.6	16
Privet	2	2.0	3
Red Maple	2	1.0	4
Sweet Gum	2	26.8	8
Sweet Gum	2	6.8	7
Sweet Gum	2	6.7	7
Sweet Gum	2	9.5	4
Sweet Gum(dead)	2	22.5	7
Sweet Gum(dead)	2	18.9	5
Tulip Poplar	2	44.4	20
Tulip Poplar	2	45.0	15
Tulip Poplar	2	51.0	20

TABLE C-7. Species of trees and shrubs along transect 1 at Choccolocco Creek. Diameter at breast height (dbh), and height of trees are provided.

Species	Transect	dbh (cm)	Height (m)
American Elm	1	8.5	7
American Elm	1	9.0	5
American Elm	1	6.0	3
Green Ash	1	13.1	8
Green Ash	1	20.2	13
Honeysuckie	1	4.1	3
Honeysuckie	1	2.0	2
Honeysuckie	1	2.5	2
Honeysuckle	1	2.0	2 2 2 2 2 2
Honeysuckle	1	< 1.0	2
Honeysuckle	1	1.0	2
Honeysuckie	1	1.0	2
Longleaf Pine	1	53.1	18
Musclewood	1	4.3	3
Red Maple	1	4.3	5
Red Maple	1 .	2.7	2 2
Red Maple	1	1.0	2
Red Maple	1	13.3	7
Red Maple	1	6.6	3
Sweet Gum	1	27.8	16
Sweet Gum	1	23.7	11
Sweet Gum	1	39.5	3
Sweet Gum	1	11.0	11
Sweet Gum	1	14.7	15
Sweet Gum	1	9.8	8
Sweet Gum	1	32.1	16
Sweet Gum	1	14.8	13
Sweet Gum	1	8.9	5
Sweet Gum	1	20.0	11
Sweet Gum	1	28.1	13
Sweet Gum	1	19.0	10
Sweet Gum	1	12.2	8
Tulip Poplar	1	25.9	13
Tulip Poplar	1	29.3	11
Water Oak	1	35.3	11
Water Oak	1	44.8	13

TABLE C-6. Species of trees and shrubs along transect 2 at Battle Drill Area. Diameter at breast height (dbh), and height of trees are provided.

Species	Transect	dbh (cm)	Height (m)
Green Ash	2	1.0	3
Loblolly Pine	2	30.8	10
Mockernut Hickory	2 2	3.4	3
Post Oak	2	5.1	4
Red Maple	2	3.0	6
Sweet Gum	2 2 2	1.0	2
Sweet Gum	2	1.0	2
Sweet Gum	2	2.3	3
Sweet Gum	2	5.4	3
Sweet Gum	2	2.2	3
Sweet Gum	2	4.1	4
Sweet Gum	2	4.5	4
Sweet Gum	2	6.1	5
Sweet Gum	2	3.6	3
Sweet Gum	2	3.0	3
Sweet Gum	2	2.7	2
Sweet Gum	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4.5	3
Sweet Gum	2	5.1	7
Sweet Gum	2	3.1	6
Sweet Gum	2	1.0	2
Sweet Gum	2	2.7	3
Sweet Gum	2	<1.0	2
Sweet Gum	2	<1.0	2
Sweet Gum	2	<1.0	2
Sweet Gum	2	<1.0	2
Sweet Gum	2	8.2	6
Sweet Gum	2	5.2	5
Sweet Gum	2	<1.0	2
Sweet Gum	2	<1.0	3
Sweet Gum	2 2 2 2 2	7.4	5
Water Oak	2	32.2	13
Water Oak	2	12.7	8
Water Oak	2	15.1	8
Winged Elm	2	1.0	3
Winged Elm	2	<1.0	2

TABLE C-5. Species of trees and shrubs along transect 1 at Battle Drill Area. Diameter at breast height (dbh), and height of trees are provided.

Species	Transect	dbh (cm)	Height (m)
American Plum	1	7.7	5
American Plum	1	4.6	5
American Plum	1	3.2	3
American Plum	1	7.5	5
Bitternut Hickory	1	3.1	3
Bitternut Hickory	1	12.1	8
Bitternut Hickory	1	5.6	6
Black Cherry	1	8.3	5
Boxelder	1	1.4	3
Boxelder	1	1.0	2
Boxelder	1	9.9	7
Boxelder	1	5.2	5
Green Ash	1	22.5	10
Green Ash	1	21.2	11
Green Ash	1	2.2	5
Green Ash	1	5.9	6
Green Ash	1	4.8	3
Ironwood	1	10.5	6
Loblolly Pine	1	32.5	12
Loblolly Pine	1	26.2	11
Loblolly Pine	1	22.6	11
Loblolly Pine	1	10.3	6
Musclewood	1	2.5	3
Musclewood	1	1.0	2
Sweet Gum	1	1.8	3
Sweet Gum	1	9.5	10
Sweet Gum	1	12.9	10
Tulip Poplar	1	8.8	5
Tulip Poplar	1	18.2	7
Tulip Poplar	1	22.8	8
Unknown (dead)	1	12.9	4
Water Oak	1	8.0	5
Water Oak	1	6.8	5
Water Oak	1	4.7	5
Winged Elm	1	7.3	4
Winged Sumac	1	3.5	3

TABLE C-4. Species of trees and shrubs along transect 2 at Range 56. Diameter at breast height (dbh), and height of trees are provided.

Species	Transect	dbh (cm)	Height (m)
American Elm	2	16.5	7
American Elm	2	11.1	5
Basswood	2 2	13.9	11
Basswood	2	18.2	7
Basswood	2	15.5	5
Boxelder	2	14.2	7
Boxelder	2 2	70.0	10
Boxelder	2	19.0	7
Elderberry	2	<1.0	3
Elderberry	2	<1.0	2
Elderberry	2	<1.0	2
Elderberry	2	<1.0	3
Flowering Dogwood	2	2.2	3
Flowering Dogwood	2	4.6	3
Hackberry	2 2 2	8.9	4
Mockemut Hickory	2	<1.0	2
Paw Paw	2	<1.0	2
Paw Paw	2	2.5	3
Paw Paw	2	<1.0	3
Paw Paw	2	<1.0	2
Paw Paw	2 2	<1.0	3 3 2 2 3
Paw Paw	2	1.5	3
Paw Paw	2	2.0	
Paw Paw	2	3.0	3
Paw Paw	2	<1.0	3 3 2 2 2
Paw Paw		<1.0	2
Privet	2	<1.0	2
Privet	2	<1.0	2
Privet	2	<1.0	3
Privet	2 2 2 2 2 2 2 2	<1.0	3
Privet	2	<1.0	2 2
Redbud	2	2.8	2
Redbud	2	1.0	3
Redbud	2	<1.0	2
Redbud	2	1.5	3
Tulip Poplar	2	6.3	3
Water Oak	2	1.5	3
Water Oak	2	1.0	2 3 3 3 2
Water Oak	2	52.7	13
Water Oak	2 2 2 2 2 2 2 2	41.0	15
Winged Elm	2	<1.0	2

TABLE C-3. Continued.

Species	Transect	dbh (cm)	Height(m)
Privet	1	1.5	3
Redbud	1	1.0	2
Redbud	1	1.6	3
Redbud	1	1.0	3
Redbud	1	2.9	3
Slippery Elm	1	2.2	2
Sweet Gum	1	11.2	8
Tulip Poplar	1	<1.0	2
Winged Elm	1	<1.0	2
Winged Elm	1	<1.0	2
Winged	1	<1.0	2
Sumac			

TABLE C-3. Species of trees and shrubs along transect 1 at Range 56. Diameter at breast height (dbh), and height of trees also are given.

Species	Transect	dbh (cm)	Height(m)
Boxelder	1	<1.0	2
Elderberry	1.	<1.0	2
Green Ash	1	1.0	2
Green Ash	1	2.3	2 3
Green Ash	1	<1.0	2
Green Ash	1	<1.0	2
Loblolly Pine	1	13.4	10
Loblolly Pine	1	23.2	13
Loblolly Pine	1	24.9	13
Loblolly Pine	1	19.2	11
Loblolly Pine	1	26.4	11
Loblolly Pine	1	20.1	11
Loblolly Pine	1	27.6	7
Loblolly Pine	1	27.7	11
Loblolly Pine	1	22.9	13
Loblolly Pine	1	26.6	15
Loblolly Pine	1	19.8	11
Loblolly Pine	1	24.4	13
Loblolly Pine	1	15.4	10
Loblolly Pine	1	9.6	3
Loblolly Pine	1	11.4	8
Loblolly Pine	1	12.9	8
Loblolly Pine	1	16.6	8
Loblolly Pine	1	14.6	9
Loblolly Pine	1	22.0	10
Loblolly Pine	1	8.3	8
Loblolly Pine	1	11.0	7
Loblolly Pine	1	13.7	8
Loblolly Pine	1	8.7	7
Loblolly Pine	1	7.8	7
Loblolly Pine	1	22.6	11
Loblolly Pine	1	7.6	7
Lobiolly Pine	1	23.3	11
Loblolly Pine	1	8.7	8
Loblolly Pine	1	16.9	11
Loblolly Pine	1	20.2	10
Loblolly Pine	1	19.1	10
Lobiolly Pine (dead)	1	17.2	7
Lobiolly Pine (dead)	1	15.8	5
Loblolly Pine (dead)	1	12.8	3
Loblolly Pine (dead)	1	6.0	5
Loblolly Pine (dead)	1	10.3	5 5
Loblolly Pine (dead)	1 1	6.8	5
Loblolly Pine (dead)		17.7	3
Privet	1	<1.0	22

TABLE C-2. Continued.

Species	Transect	dbh (cm)	Height (m)
Pignut Hickory	2	< 1.0	2
Pignut Hickory	2	1.0	2
Pignut Hickory	2	2.0	2
Post Oak	2	17.7	13
Post Oak	2	3.7	4
Post Oak	2	27.4	11
Red Oak	2	9.4	8
Red Oak	2	2.0	2
Red Oak	2	10.0	8
Red Oak	2	1.0	2
Red Oak	2	1.5	2
Red Oak	2	1.5	2
Red Oak	2	2.0	3
Red Oak	2	3.6	4
Shagbark Hickory	2	2.5	4
Sourwood	2	2.9	3
Sourwood	2	4.9	4
Sourwood	2	10.8	7
Sourwood	. 2	2.5	3
Sourwood	2	3.2	4
Tulip Poplar	2	4.3	5
Virginia Pine	2	1.0	2
White Oak	2	12.8	11
White Oak	2	6.6	5
White Oak	2	12.8	7
White Oak	2	3.1	3
White Oak	2	18.4	10
White Oak	2	1.0	2
White Oak	2	3.8	3

TABLE C-2. Species of trees and shrubs along transect 2 at Range 24 A. Diameter at breast height (dbh), and height of trees are provided.

Species	Transect	dbh (cm)	Height (m)
Basket Oak	2	8.5	7
Basket Oak	2 2	41.6	25
Blackjack Oak	2	< 1.0	2 3
Blackjack Oak	2	4.3	3
Blackjack Oak	2	2.0	3 3 2 2 7
Blackjack Oak	2	2.7	3
Blackjack Oak	2	2.0	2
Flowering Dogwood	2	1.0	2
Flowering Dogwood	2	10	
Flowering Dogwood	2	1.7	2
Flowering Dogwood	2	6.6	5
Flowering Dogwood	2	1.7	2 2
Flowering Dogwood	2	2.0	
Longleaf Pine	2	18.2	11
Longleaf Pine	2	14.7	11
Longleaf Pine	2	13.9	13
Longleaf Pine	2	8.4	7
Longleaf Pine	2	3.2	2
Longleaf Pine	2 2 2 2 2 2 2 2	1.0	2
Longleaf Pine	2	10.7	7
Mockernut Hickory	2	1.0	3
Persimmon	2 2	3.0	4
Persimmon		1.0	3 2 2 2 2 2 3 3 2 3
Persimmon	2	2.1	2
Persimmon	2 2	1.8	2
Persimmon	2	< 1.0	2
Persimmon	2	1.7	2
Persimmon	2	< 1.0	2
Persimmon	2	1.4	3
Persimmon	2 2 2 2	1.5	3
Persimmon	2	2.0	2
Persimmon	2	1.0	3
Persimmon	2	1.5	3
Persimmon	2	2.6	3
Persimmon	2	2.0	3
Persimmon	2	< 1.0	2
Persimmon	2	< 1.0	2
Persimmon	2 2 2 2 2 2	< 1.0	2
Persimmon	2	1.2	2
Persimmon	2	2.6	2
Persimmon	2	1.5	3
Persimmon	2 2 2 2 2	1.2	3 2 2 2 2 2 3 3 3
Persimmon	2	1.5	3
Pignut Hickory	2	1.7	3

TABLE C -1. Continued.

Species	Transect	dbh (cm)	Height (m)
Pignut Hickory	1	2.8	3
Post Oak	1	17.9	13
Red Maple	1	1.5	3
Red Maple	1	2.0	2
Red Maple	1	< 1.0	2
Red Maple	1	1.2	3
Red Maple	1	2.5	4
Red Maple	1	4.5	5
Red Maple	1	1.5	3
Sourwood	1	2.2	3
Virginia Pine	1	1.2	3
White Oak	1	1.0	3
Winged Sumac	1	2.0	2
Winged Sumac	1	1.0	3
Winged Sumac	1	1.3	22

TABLE C -1. Species of trees and shrubs along transect 1 at Range 24 A. Diameter at breast height (dbh), and height of trees are provided.

Tropost		
Transect	dbh (cm)	Height (m)
1	40.6	18
	1.5	2
1	1.5	2 3
1	1.8	3
1	14	11
1	2.5	2
1	2.5	2
1	13.7	11
1	2.5	4
1	1.8	3
1	1.5	2
1	3.1	5
1	2.5	3
1	< 1.0	2
1	< 1.0	2
1	3.7	3
1	2.5	3
1	2.0	2 3 3 3
1	1.9	3
1	3.0	3 3
1		7
1	31.1	16
1		8
1	5.2	5
1	1.5	2
1	1.2	2
1		2
1		2
1		3
1		2
1		3
1		2 3 3 3
1		3
1		
		3 2 3 2 3
		3
		2
		3
		3
		3
		3 3 2
		2
		3
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 40.6 1 1.5 1 1.5 1 1.8 1 14 1 2.5 1 2.5 1 13.7 1 2.5 1 1.8 1 1.5 1 3.1 2.5 1 40.6 1 1.8 1 2.5 1 1.0 1 3.7 1 2.5 1 41.0 1 3.7 1 2.5 1 1 2.5 1 1 2.5 1 1 2.5 1 1 2.5 1 1 1.0 1 1 1.0 1 1 1.8 1 1 1.5 1 1 1.0 1 1 1 1.0 1 1 1 1.0 1 1 1 1.0 1 1 1 1.0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Appendix C

Species of Trees and Shrubs at each Sample Site

TABLE B-4. Characteristics of water and sediment samples collected at Choccolocco Creek. Water temperature, dissolved oxygen, pH, conductivity (TDS), and turbidity are presented.

					Š	Sample Location	tion				
	-	2	3	4	သ	9	7	7-dup	80	σ	10
Surface water								SWA		,	
sample number	SW4-1	SW4-2 SW	£-3	SW4-4	SW4-5	SW4-6	•	7-01-0	CWAR	CIVI O	C14/4 40
Serial #	334398		395	334388/9	334397	334384		334370	334303	224242	324204
Stream width (m)	9.9	9.9	6	13.3	10	6	10.4	277	504595	0,4040	40.04
Stream depth (m)	ر برد برد	1 15) (75.0	, _C	9 6		⊃ ! - d	n (ر ا ا	13.3
	3	2 () (2.0	` •	0.0		>. O	0.325	0.45	0.275
Sample deptn (m)	4.0	6.0	0.15	4 .0	0.35	0.35		0.45	0.15	0.2	0.15
lemperature (C)	25	5 0	5 6	5 6	5 6	5 8		26	26	27	27
핍	7.7	7.9	7.8	7.9	7.9	7.8		2 2	α ν	. 0	. 0 /
DO ₂ ppm	4	ĸ	G	7	ַר			<u>.</u>	5. 6	9. (<u>P</u> 1
Total dissolved	•	•	•	-)	-		n	D	o	•
solids	40	20	40	40	40	40	40	Ş	9	•	Ş
Hardness mg/L	58	09	26	54	5.5) (, r	7	e u	Q (3
Turbidity	medium	medium	×o	medium	med-low	<u> </u>	med-low	mod-low	3 2	8 2	<u>:</u>
Sediment sample						<u>:</u>		SD4-	2	<u>*</u>	<u>\$</u>
number	SD4-1	SD4-2	SD4-3	SD4-4	SD4-5	SD4-6	SD4-7	2-dnp	SD4-8	SD4.9	SD4.10
;	muď,		muď,	muđ,	silt,	gravel.			aravel	בות בות	large
Sediment type	sand	mud	silt	sand	gravel	sand	silt, sand silt, sand	silt, sand	mud	sand	gravel

^{1:} dup refers to a replicate sample.

TABLE B-3. Characteristics of water and sediment samples collected at Range 56. Water temperature, dissolved oxygen, pH, conductivity (TDS), and turbidity are presented.

					San	Sample Location					
	-	2	3	4	5	9	7	89	6	100	10-dim
Surface water											EM3
sample number	SW3-1	SW3-2	SW3-3	SW3-4	SW3-5	SW3-6	SW3-7	SW3.8	CW2.9	CW2_10	40.7
Serial #	352200	352195	352199	334403	352194	352191	352189	352190		352103	352108
Stream width (m)	13.3		13.3	20		16.6	25.5	20.00	5 8 8 8	10	332 130
Stream depth (m)	0.5	0.4	0.3	4.0	9.0	0.5	20	0.45) C	0.475	0.475
Sample depth (m)	0.3	0.2	0.2	0.25	0.3	0.35	0.1	0.75		0.25	0.47
Temperature (C)	24	24	25	27	5 8	5 8	25	26		25.5	2. E.
Hd	8.1	8.2	8.4	8.3	8.3	œ	6	00) (°	ν γ α
DO ₂ ppm	7	7	œ	7	ď	α	, Ç	,) a); a
Total dissolved			,	•	•	•	2	-		0	0
solids	80	6	06	80	80	80	8	ç	Ş	č	S
Hardness mg/L	113	114	126	114	118	126	116	128	5 5	3 5	122
Turbidity	high	medium	medium	high	high	medium	<u> </u>	medium	medium	medium	medium
Sediment sample				•	•		:				SD3-
number	SD3-1	SD3-2	SD3-3	SD3-4	SD3-5	SD3-6	SD3-7	SD3-8	SD3-9	SD3-10	dup-10
:		muď,	mud,	muck,	muck,		rocks,	rocks,	bedrock,	gravel.	gravel.
Sediment type	mud, silt	muck	muck	mud	mud	rocks	gravel		sand	bedrock	bedrock

1: dup refers to a replicate sample.

TABLE B-2. Characteristics of water and sediment samples collected at Range 24A. Water temperature, dissolved oxygen, pH, conductivity (TDS), and turbidity are presented.

	Sa	mple Loc	ation
	1	2	3
Surface water			
sample number	SW1-1	SW1-2	SW1-3
Serial #	352188	334359	334382
Stream width (m)	1.1	1.2	0.6
Stream depth (m)	0.2	0.2	0.175
Sample depth (m)	0.1	0.1	0
Temperature (C)	26	28	22
pН	7.6	7.7	6.4
DO ₂ ppm	6	6	5
Total Dissolved			
Solids	10	20	0
Hardness mg/L	10	20	6
Turbidity	clear	clear	clear
Sediment Sample			
number	SD1-1	SD1-2	SD1-3
	rock,		
	gravel,	rock, silt,	orange
Sediment type	detritus	gravel	precipitate

TABLE B-1. Characteristics of water and sediment samples collected at Battle Drill Area. Water temperature, dissolved oxygen, pH, conductivity (TDS), and turbidity are presented.

					Sa	Sample Location	ioi				
	τ-	2	3	4	5	9	7	8	6	10	10-dup
Surface water											SW2-
sample number	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8	SW2-9	SW2-10	dup-10
Serial #	334407	334409		334405	334410	334411	334412	334413	334406	334414	3344
Stream width (m)	6.6	9.9	9.9	9.9	#	=	16.6	20	16.6	=	9.9
Stream depth (m)	0.2	9.0	0.2	0.55	0.2	0.5	0.45	0.85	12	1.05	0.15
Sample depth (m)	0.1	0 .4	0.1	0.3	0.15	0.2	0.2	9.0	6.0	0.7	0.125
Temperature (C)	25	25	22	5 8	56	52	27	5 6	5 8	5 8	56
Ha.	8.1	7.9	7.8	7.8	7.8	7.8	7.9	7.9	7.9	7.8	7.9
DO ₂ ppm	9	ω	ω	ဖ	7	7	ဖ	ω	œ	7	c
Total Dissolved								,)	•)
Solids	8	6	8	8	80	8	8	8	80	80	80
Hardness mg/L	126	130	126	126	126	118	120	130	120	128	14
Turbidity	wol	high	high	high	high	medium	medium	high	high	high	low
Sediment Sample											SD2-
number	SD2-1	SD2-2	SD2-3	SD2-4	SD2-5	SD2-6	SD2-7	SD2-8	SD2-9	SD2-10	dup-10
	1	-		•	•	•	muck,	sand,	,	,	
Segiment type	gravel,	ock,	sand,	sand,	sand,	sand,	sand,	muck,	gravel,	gravel,	gravel,
	sand	sand	D M	mud	gravel	gravel	gravel	gravel	sand	sand	sand

^{1:} dup refers to a replicate sample.

Appendix B

Water and Sediment Data

INSTRUMENT PARAMETERS FORM

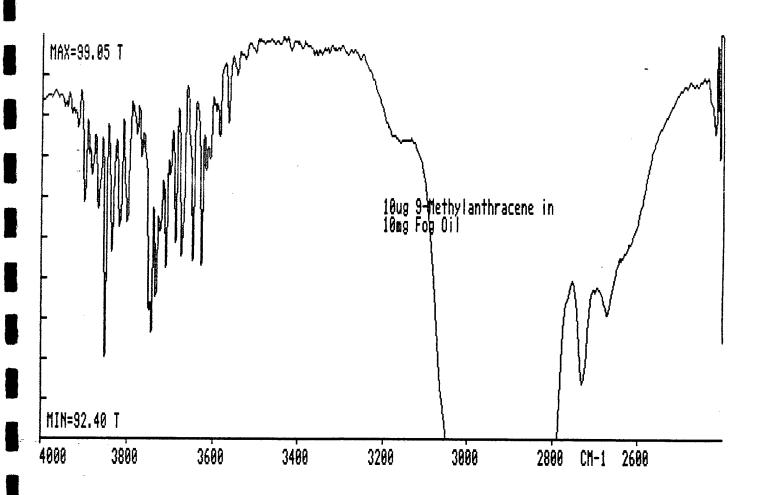
INSTRUMENT PARAMETERS FORM

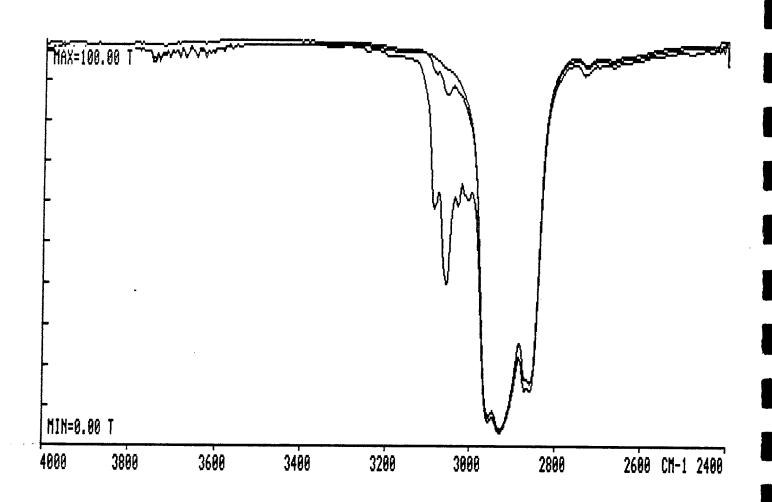
ABC Study No : 42818
Test Material: <u>Hexachloroethane</u>
Sample Matrix : Varies
Autosampler: HP5890 Series II (1626-139)
V.G. Channel No.: 39
Column: DB-5 15m X 0.53mm ID 0.5 μ film thickness (5635316B)
Temperature Program: Initial Temp.: _50°C Initial Hold: _1.00 min Initial Ramp: _2.5°C/min to 70°C Ramp A: _50°C/min to 300°C Final Hold: _1.00 min Purge On: _1.50 min
Injector Temperature : <u>275°C</u>
Flow Rate: 1.5 mL/min
Detector: <u>ECD</u> Temperature: <u>300°C</u> Range: <u>3</u>
Injection Volume: 1.0 μl
These parameters were used for every set injected on this instrument.
Prepared By: Date: 31 Jan 96 Checked By: Date: 31 Jan 96

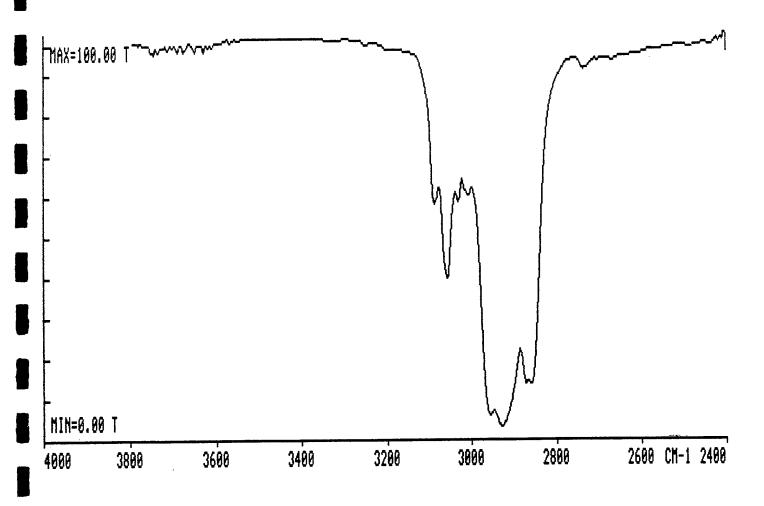
Observations and/	or Remarks Form
Test Material: Fog Oil	Lab Form No. 72
Sample Type: <u>Varies</u> ABC Study No.: <u>42818</u> Principal	ABC Laboratories, Inc. 7200 E. ABC Lane Columbia, MO 65202-8015
Investigator: Kelly V. Davis	
The petroleum ether and methylene control from the silica gel column and injected results from both fractions were summer	ed on both FID and ECD. The
Prepared By: Tank Drant Checked By: 7600, 7. Ocars	Date: <u>5 Fob 96</u> Date: <u>5 Feb 96</u>

ABC Laboratories, Inc	
OBSEF	RVATIONS AND/OR REMARKS FORM
Test Material: Fog Oil	
Sample Type: Bats	
Sample Typo	
ABC Study No: 428	18
The following bats were disso 10% formalin and identified a	ected; the kidneys and livers were placed in vials containing is follows:
Sample ID	Field ID Sax and
TM1-1-808	TM1-1 - M LIVE DECONGISCE
TM1-2-809	TM1-2 — P T-M3-1 — M Liver yellowish, small TM3-2 — F Liver yellowish (Small
TM3-1-809	T-M3-1 _ M Liver yellowish Shall
TM3-2-810	
TM4-1-809	TM4-1 - M TM4-810-1 - FliverSome what decomposed
TM4-1-810 TM3-6-811	TM3-6 — F
TM4-1-811	TM4-1-811 — M
TM2-1-812	
TM2-11-812	TM2-11 - M Liver Decomposed
TM2-2-812	TM2-2 - F
TM2-3-812	TM2-3 - F Liver Decomposed
TM2-4-812	TM2-4 - P Liver Decompose
TM2-5-812	TM2-5 - F TM2-6 - F TM4-1-812 - M Lisa Decomposed
TM2-6-812 TM4-1-812	TM2-6 - F TM4-1-812 - M Live Decomposed
TM2-1-813	TM2-1 — M
TM4-1-813	TM4-1-813 - M
TM4-2-813	TM4-2-813 — M
TM4-3-813	TM4-3-813 ~ M
	• •
	•
Prepared By: QUK Con	Date: 8 Sept 95
Checked By: Linotly	Burks Date: 9-8-95
Principal Analytical	
Investigator: 1600, 9	New Date: 1/ 500+ 95

Form #AC-04A (10/10/91)

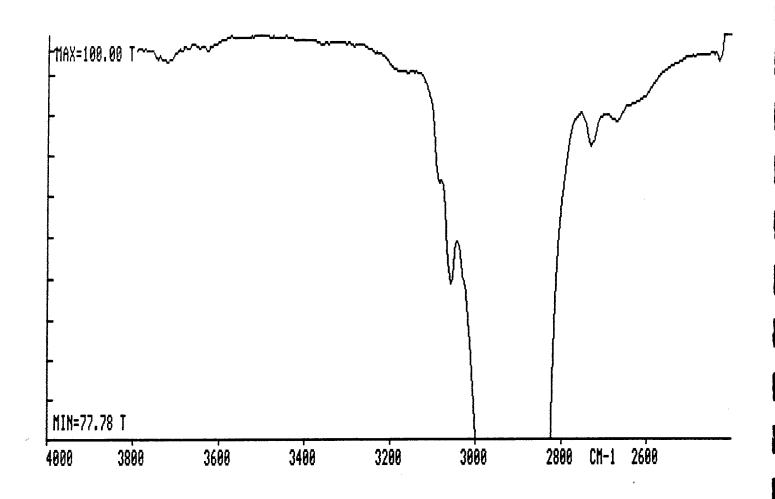






10 mg 9-methylauthracene Peaks at 3032, 358 3087 in 10 ml Freon

(1000 mg/ml Fog oil)



OIGHE Fug Oil

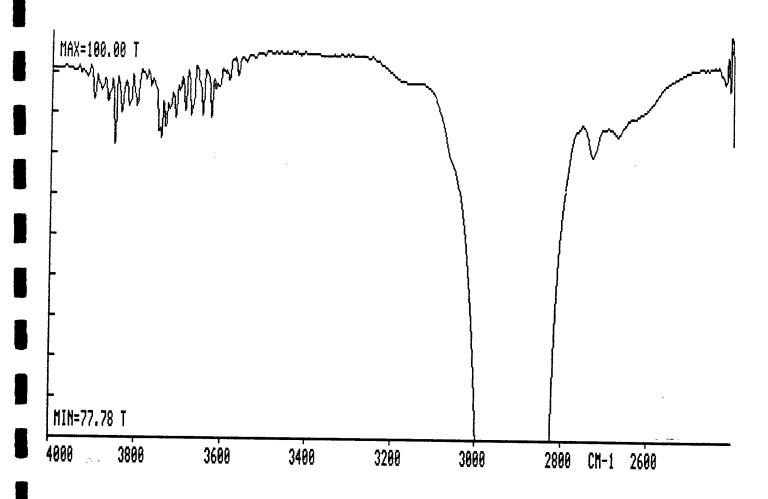
Peaks et: 3058, 3084

I mg 9-methylanthraceme

3030(shaller)

in lowe from

(100mg Int Fog (3.1)



0.01 ml Fog Oil

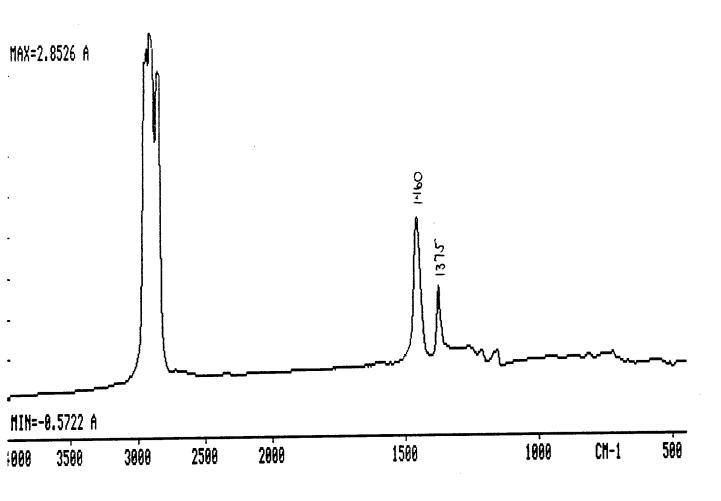
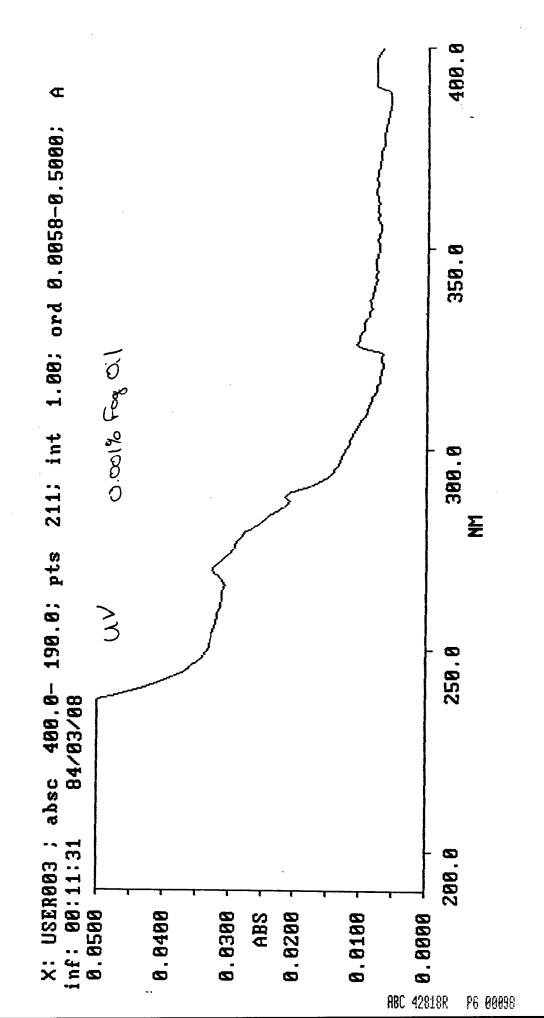
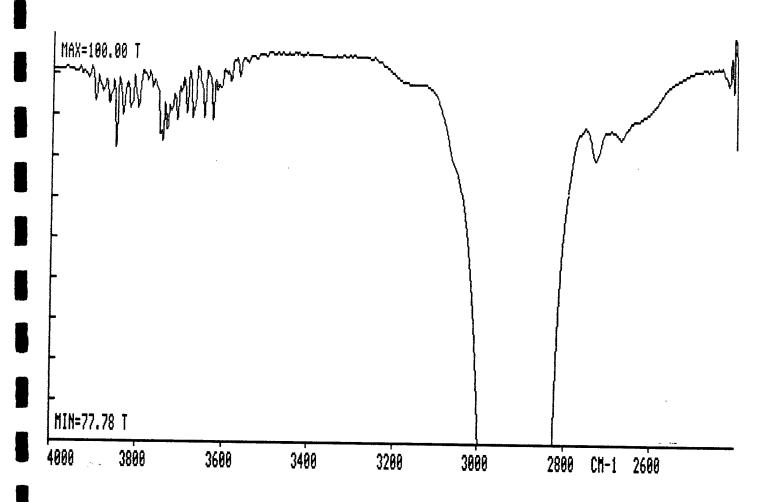


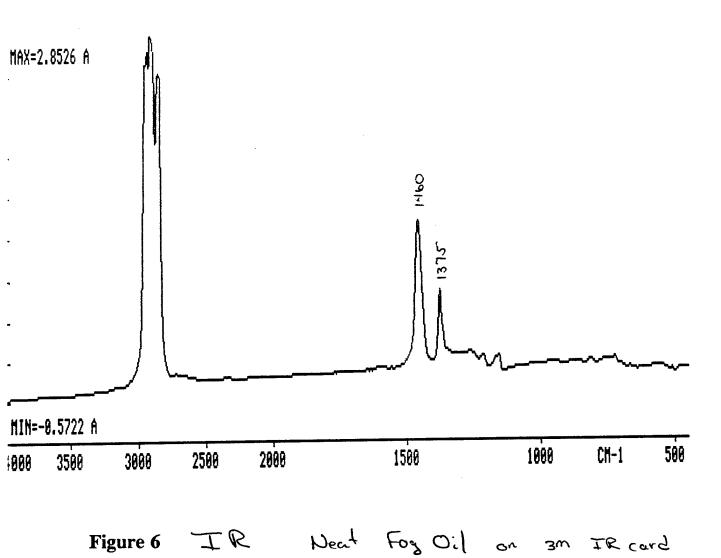
Figure 6 IR Neat Fog Oil on 3m IR card

Figure 5

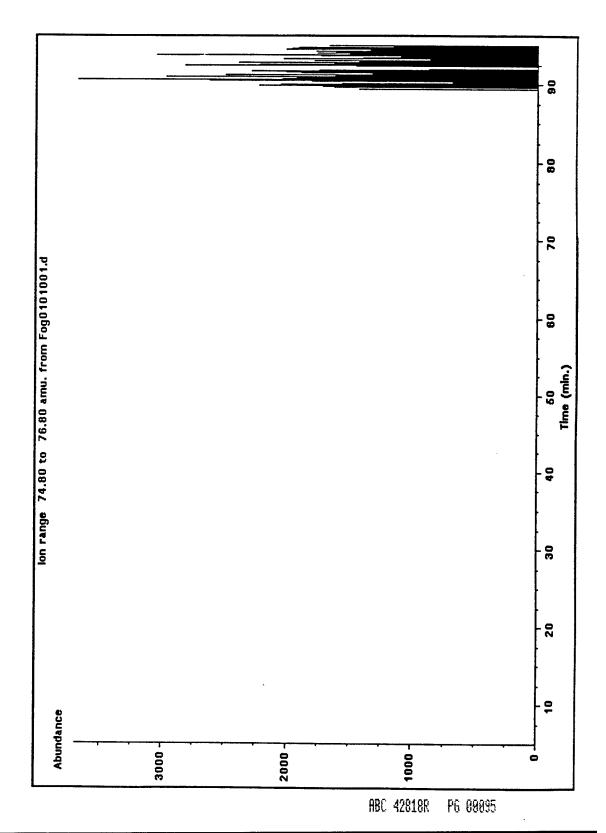


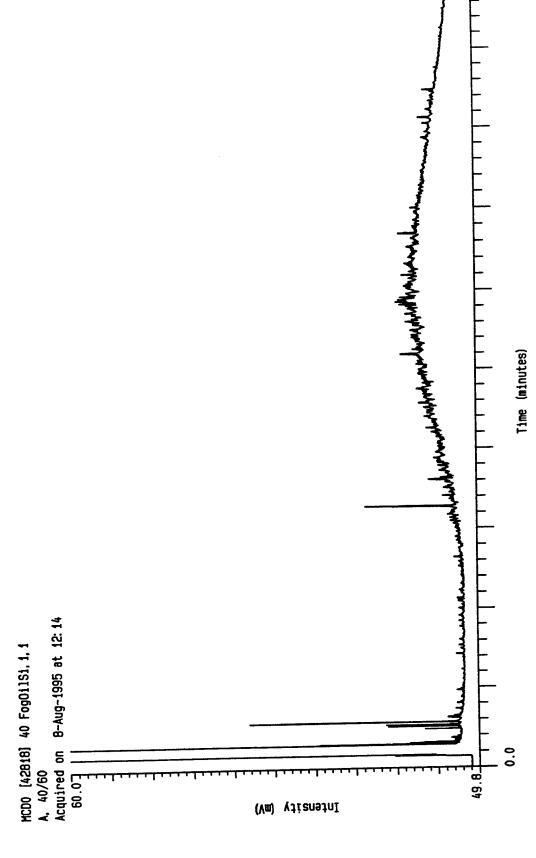


0.01 ml Fog O.1







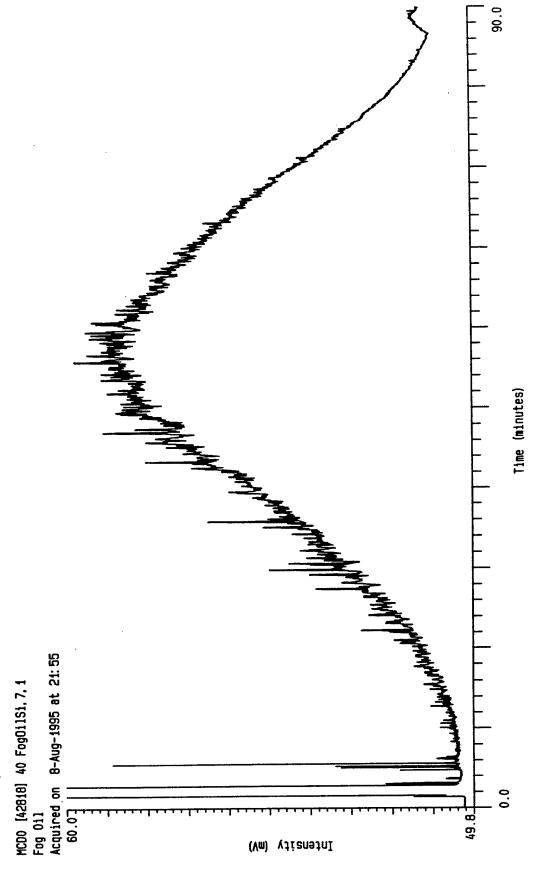


90.0

GC/FID of 1% Fog Oil in hexame Figure 1 ABC Laboratories, Inc.

Date of Report: 09 AUG 95 at 08: 08: 43

MCPP ver 2.3



Attempts were made to characterize the fog oil. The parent oil was diluted in hexane to a concentration of 1 %. This was injected on a GC/FID using a DB-5 (Figure 1). The oil was cleaned up using a Si column and the extract injected (Figure 2). The 1 % solution was injected on a GC/MSD and the ion range 75 -76 amu (aromatic ring) was monitored (Figure 3). The absence of any peaks in this mass range indicate there are no aromatics in the fog oil.

- The fog oil was also analyzed by UV. A 0.001 % solution was prepared and scanned from 200 to 400 nm (Figures 4 and 5). The lack of an absorbance peak ~ 250 nm indicates there are no aromatics in the fog oil.
- Finally the fog oil was analyzed by IR. The neat fog oil was placed on an IR card (Figure 6). The triplicate peaks at 2850 2960 cm⁻¹ as well as the 2 peaks at 1375 and 1460 cm⁻¹ are characteristic of alkanes. There are no peaks at 3000 3100 cm⁻¹ (aromatic) or at 3020 3080 cm⁻¹ and 1640 1680 cm⁻¹ (alkenes). This indicates that there are no aromatics or alkenes in the fog oil.

Based on the above preliminary studies, it appears there are no aromatics in this fog oil sample. Further studies need to be done to determine detection limits.

O See Appendix IV

@ SEE Appendix I

